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MEMOIRS

OF THE

MEDICAL SOCIETY

OF

LONDON,

INSTITUTED IN THE YEAR 1773.

VOL. III.

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MDCCXCII.

PREFACE.

WE ſhould think ourſelves defective in gratitude to the Public, if the favourable reception of our former Memoirs had not ſtimulated us to a farther exerciſe of attention, in order to render the preſent volume equally deſerving of general approbation.——Truly ſenſible of the importance of various communications already received, and the utility of their early production, we muſt neceſſarily lament that many of them are obliged, for want of room, to be poſtponed until our next publication, the manuſcripts for the forming of which will be immediately committed to the preſs, and the volume completed with as much expedition as the nature of the work will admit of.

 This

This we have confidered ourfelves under an obligation to make known to our Correfpondents, that they might not have the leaft reafon to fuppofe us capable of difrefpect, or of being inattentive to the importance of the medical information on feveral fubjects with which they have favoured the Society. For the experience of every day not only evinces how beneficial to our fellow-creatures are the difcoveries made in the Medical Art, but how that benefit is often enhanced by expeditious promulgation.

Influenced by thefe confiderations, the Society have refolved to facilitate the future communication of their papers, by publifhing their volume in Numbers, four of which are to conftitute a volume. The firft part of the fourth volume is already in the prefs.

In order farther to promote the improvement of the healing art, in all its branches

ſo intimately interwoven with the intereſt of the community, the Society continue to offer Medals annually, as excitements to genius and abilities, that mankind in general may receive advantage from their exertions, and uſeful knowledge be diffuſed from the fountains of reaſon and experience.

Since the laſt publication the following Medals have been diſtributed:

The FOTHERGILLIAN Medal for the year 1790 was preſented to Dr. ROBERT WILLAN, of *Ely Place*, Holborn, for the beſt Diſſertation on *Cutaneous Diſeaſes*, in anſwer to the Prize Queſtion of that year.

The *Silver* Medal annually adjudged to the Author of the beſt Eſſay written within the year, by a *Fellow* of the Society, was preſented to Mr. JOHN HAIGHTON, Surgeon, for

for his Paper *On Original Deafneſs*, and other ingenious communications.

The other *Silver* Medal, appropriated for the beſt Eſſay written by a Correſponding Member, or by any perſon *not* a Member of the Society, was adjudged to Dr. CALEB HILLIER PARRY, of *Bath*, C. M. S. for his Memoir *On the Removal of certain Diſeaſes of the Head by Compreſſion on the Carotid Artery.*

The Medals for the year 1791 were diſtributed as follows:

The FOTHERGILLIAN Medal to Dr. JOHN COAKLEY LETTSOM, F. M. S. for the beſt Diſſertation in Anſwer to the Queſtion, "*What are the principal Diſeaſes of great Towns, and what are the beſt Methods of preventing or curing the ſame?*" To which was required to be added, the hiſtory of the Epidemic

Epidemic Conſtitution and Diſeaſes of ſome great Town, for one whole year at leaſt.

The *Silver* Medal for the beſt Eſſay or Eſſays written by a *Fellow*, was adjudged to Mr. JAMES WARE, Surgeon, for three valuable Diſſertations *On Diſeaſes of the Eye*.

The other *Silver* Medal, to Mr. CHARLES KITE, Surgeon, of *Graveſend*, C. M. S. for his very ingenious Memoir *On Submerſion*.

No ſatisfactory Anſwer having been given to the Queſtion on MINERAL POISONS, which originally ſtood as the ſubject for the Prize Diſſertations for the preſent year, 1792, the ſame ſtands over until next year.

The Silver Medals of the preſent year were adjudged,

1. To Mr. WILLIAM TURNBULL, Surgeon, F. M. S. for his Diſſertation on *Extra Uterine*

Uterine Gestation, and other ingenious papers.

2. To Dr. JOHN SHADWELL, of *Brentwood*, C. M. S. for his Paper *On the Internal and External Use of Oil in Hydrophobia.*

For the four ensuing years, the succeeding subjects are proposed, as Prize Questions, for the GOLD OF FOTHERGILLIAN Medals, under the subsequent Regulations:

The MEDAL for the year 1793 will be adjudged to the Author of the best Dissertation, in answer to the following Question:

"What are the Effects of *MINERAL* "POISONS upon living Animals, and more "particularly upon MANKIND, when taken "internally, or applied externally; and what "are the most efficacious Means of counter-"acting these Effects?"

Question

Question for the Year 1794.

"What are the Effects of *VEGETABLE* "POISONS upon living Animals, and more "especially upon MANKIND, when taken in-"ternally, or applied externally; and what "means are most efficacious in counteracting "these Effects?"

For the Year 1795.

"What are the Effects of *ANIMAL* "POISONS, either by internal or external "Applications, upon living Animals, and "especially upon MANKIND; and what are "the most efficacious Means of counteract-"ing these Effects?"

For the Year 1796.

"What are the Effects of *AËRIAL* POI-"SONS upon living Animals, and especially "upon MANKIND; and what are the most "efficacious

" efficacious Means of counteracting these
" Effects?"

N. B. It is desired that every Answer to any of the foregoing Questions may, as far as possible, be founded upon actual Experiments, or well authenticated Facts. And that the several Competitors will, if practicable, ascertain the Specific, or Characteristic Symptoms of each particular POISON; in order to assist MEDICAL PRACTITIONERS not only in their endeavours to afford relief, but in the evidence which they may be required to give upon Questions of this nature in any COURT of JUSTICE.

REGULATIONS.

I. Each Dissertation shall be delivered to the Secretary in the LATIN, ENGLISH, or FRENCH Language, on or before the First

First Day of NOVEMBER, of the preceding Year; and the adjudication of the Medal ſhall take place in the laſt week of the enſuing FEBRUARY.

II. With each Diſſertation ſhall be delivered a ſealed Packet, with ſome Motto or Device on the Outſide; and within, the Author's Name and Deſignation: and the ſame Motto or Device ſhall be put upon the Diſſertation, that the Society may know how to addreſs the ſucceſsful Candidate.

III. No Paper with the Name of the Author affixed can be received; and if the Author of any Paper ſhall diſcover himſelf to the Council, or to any Member thereof, ſuch Paper ſhall be excluded from all competition for the Medal.

IV. All

IV. All the Diſſertations, the ſucceſsful one excepted, ſhall be returned, if deſired, with the ſealed Packets unopened.

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ADVER-

ADVERTISEMENT.

The Delay in the Publication of this Volume has given much concern to the members of the Medical Society, which has been increafed by the neceffity they have been under of poftponing fome important communications till the appearance of the next Volume: but, as the fourth Volume is actually in the Prefs, in which will be included, among others, the following communications, we hope the Authors of them will not deem the Medical Society inattentive to their valuable favours.

1. *Dr.* WITHERS *on a fecond Small Pox.*
2. *Mr.* KITE, *on the Refin of the Acaroides Refinifra.*
3. *Dr.* MUDGE *on the Treatment of Fiftula in Ano.*
4. *Dr.* CURRIE *on Digitalis Purpurea.*
5. *Mr.* GAITSKELL *on Pemphigus.*
6. *The fame on the Abforption of Emetic Tartar and Arfenic.*

7. *Mr.* KITE, *Observations on Inoculation.*
8. *Dr.* HARRISON *on Typhus.*
9. *Dr.* FOTHERGILL *on Pulmonary Consumption.*
10. *Mr.* MALDEN, *Cases of the Locked Jaw.*
11. *The same on the Tinæa, or Scald Head.*
12. *Mr.* BIRD *on an Aneurism.*
13. *Mr.* PRICE *on the external Use of Antimonium Tartarizatum.*
14. *Dr.* HUBBARD *on suspended Animation.*
16. *Dr.* SCHÆFFER *on a Disease of Infants.*
17. *Dr.* BISSETT *on Idiopathic Dissolution of the Blood.*
18. *Mr.* CRIBB *on the Hydrocephalus Internus.*
19. *Mr.* DOUGLASS *on an enlarged Stomach.*
20. *Mr.* PARKINSON *on a horny Excrescence.*
21. *Dr.* ROSELT *on Deafness.*

ERRATUM.

P. 160, l. 2, *for* Russel, *read* Rush.

MEMOIRS, &c.

ARTICLE I.

A CASE *of original* DEAFNESS *with the* APPEARANCES *on* DISSECTION.

BY J. HAIGHTON, SURGEON, F.M.S.

Read JANUARY 19, 1789.

THE vital parts, and the organs of ſenſe, are more perfectly formed, and exiſt in a higher degree of perfection at the time of birth than the other parts of the body.

The neceſſity of this is very obvious; for if the former were not at this period formed in ſome degree of perfection, they would be unfit for performing thoſe offices which are abſolutely neceſſary for the preſervation of life.

The different organs of ſenſe are alſo very perfectly conſtructed, that they may be the more able to receive thoſe various impreſſions which every ſurrounding object is ready to make on the new-born infant, and which,

being conveyed to the mind, produce what is called *perception*.

As ſoon as the mind becomes furniſhed with a variety of perceptions, it begins to employ itſelf in comparing them with each other, by which it diſcovers their agreement or diſagreement: this is called *judgment*.

But before the mind can exert itſelf in acts of judgment, it muſt be well ſtored with a variety of perceptions: to this end it is expedient that the different organs of ſenſe convey faithfully to it ſuch impreſſions as may be made on them; but when either from diſeaſe, accident, or original maleformation, they are unable to diſcharge that office, the mind is deprived of a part of its materials, its operations become proportionally circumſcribed, and its attainments impeded.

Original blindneſs has always been conſidered as a misfortune, becauſe it keeps us in total ignorance of every thing relative to colour, confines our knowledge of the ſituation of places, and unfits us for moſt of the common employments of life. But original deafneſs places a perſon in a ſtill more pitiable ſituation: he is unavoidably dumb; for in order to ſpeak it is neceſſary to learn a language; and

and to learn a language it is neceſſary to hear. But to form a juſt idea of his calamity, we need only reflect on the very great loſs he ſuſtains from being deprived of the lights of education, and of the knowledge of many important truths inſeparably connected with his happineſs.

It would be a godlike act to relieve a fellow-creature from ſuch a ſtate of wretchedneſs; it would be in effect elevating his mind from a low groveling ſtate, to the condition of a rational being. But this is an arduous work!

I wiſh the circumſtances of the preſent caſe had been ſuch as admitted even of *palliation*; this paper would then not only have had the merit of explaining one of the cauſes of deafneſs, but afterwards of ſuggeſting the moſt probable means of affording relief. But even this has been denied!

I muſt therefore content myſelf with laying before you, in as clear a manner as I am able, the appearances which preſented themſelves on diſſection, and ſubjoining ſuch remarks as the circumſtances furniſhed me with.

CASE.

Mr. B. died when he was about thirty years of age. Having been deaf from his birth, was consequently dumb. He possessed but little originality of genius, and his intellectual powers were very limited; but he was not destitute of talents for imitation. He frequently employed himself in drawing patterns for needle-work, and generally executed them with great exactness. He has shewn me several of his productions. I have frequently conversed with him in his own way upon ordinary occurrences; and though he often made inquiries, they were always trifling, and such as indicated a very confined understanding. His disposition was naturally irascible, but his conduct was neither vicious nor immoral. While he was lamenting his situation during the illness of which he died, his friends attempted to console him on religious grounds; they endeavoured to impress his mind with the necessity of patience, and an entire resignation to the will of the Deity, whom they represented as the author of his sufferings:

ſufferings: but ſo little light had his mind received concerning natural or revealed religion, and the relation ſubſiſting between the Creator and creature, that he put himſelf into a violent fit of anger, which was with difficulty appeaſed. After death, Mr. Walſhman, who had attended him during his illneſs, very obligingly gave Mr. Cline and myſelf an opportunity of examining the parts concerned.

APPEARANCES ON DISSECTION.

The brain, which was carefully examined, exhibited nothing peculiar; nor did any thing worthy of notice occur, until in the order of examination, we arrived at the ſeventh pair of nerves, which, from its function, is called *auditory*.

This nerve conſiſts of two portions, one of which is called *portio dura*, from its firmneſs; but its connexion with the ſenſe of hearing is ſomewhat remote; the other is called *portio mollis*, and is very properly conſidered the true auditory nerve. This laſt portion was remarkably ſmall; it did not appear to be halt

its uſual ſize; but the portio dura ſeemed in every reſpect natural.

Having taken out the temporal bones in order to examine the parts more at leiſure, we found nothing preternatural in the meatus auditorius, membrana tympani, the cavity of the tympanum, or the two apertures leading from it, viz. the Euſtachian tube, and the communication with the maſtoid cells. The figure of the four bones of the tympanum was natural, and their relative ſituation very proper. The firſt of them, called *malleus*, was attached as uſual by its manubrium to the membrana tympani; and the laſt, called *ſtapes*, had its baſis reſting on the entrance of the veſtibulum, called feneſtra ovalis.

Every appearance hitherto was natural.

The ſole cauſe of deafneſs was found in the labyrinth.

This part of the organ, conſiſting of the veſtibulum, cochlea, and ſemicircular canals, was perfectly formed; but inſtead of containing water, was filled with a ſolid caſeous ſubſtance. This was the only preternatural appearance, and I believe will be very ſufficient to explain the caſe, when we conſider the economy of this organ.

With

With this view permit me to ſubjoin a few remarks.

REMARKS.

The organ of hearing, inſtead of being divided into external and internal, may, perhaps with more propriety, be diſtinguiſhed into parts preparatory to the impreſſion of ſound, and parts more immediately ſubſervient. Under the firſt claſs may be ranked every part except the labyrinth, as the meatus auditorius, membrana tympani, the cavity of the tympanum, with its apertures and contents. Under the laſt claſs may be conſidered the labyrinth and its contents.

In the preſent caſe, the firſt of theſe claſſes appeared very perfect: the meatus auditorius conveyed the tremulous motions of the air to the membrana tympani, which again, by the communication of the malleus, incus, os orbiculare, and the ſtapes, conveyed thoſe movements to the labyrinth.

The Euſtachian tube being pervious throughout its length, performed its office, viz. that of preſerving the balance between the air on the outſide of the membrana tympani, and

that in the cavity of the tympanum, by which means that membrane is allowed to vibrate in a more perfect manner.

It is not altogether certain that an obſtructed Euſtachian tube will produce total deafneſs, though it may diminiſh that ſenſe in a very high degree, in proportion as the freedom of vibration of the membrana tympani is impeded.

But if it could be clearly proved that a total deafneſs aroſe from this cauſe; and if it were likewiſe poſſible to aſcertain this in a living ſubject; there is a probability of obtaining relief from an operation. The moſt natural idea in ſuch a caſe would be to reſtore the natural opening by the introduction of inſtruments up the noſe. But the diſtant ſituation of the orifice of this tube from the entrance of the noſtril, together with its being out of ſight, create a difficulty; and it is probable that our attempts in this way might be in vain. There remains, however, another expedient. It is well known that the maſtoid proceſs of the temporal bone is internally compoſed of large cells, which have an opening of communication with the cavity of the tympanum in a manner ſimilar to that

of

of the Euſtachian tube: in ſuch a caſe a perforation might be made into that proceſs, and the communication between the external and internal air be again reſtored.

But in the preſent caſe even this was a loſt hope! The evil here was deeper ſeated; the labyrinth was the part which alone was concerned in the complaint. Not that it failed in the performance of its office from any imperfection in its form, but merely from the nature of its contents.

Before the time of *Cotunnus* this part of the ear was ſuppoſed to contain air. It was that fluid which was thought to be put into motion by ſonorous bodies, and which, by preſſing againſt the auditory nerve lining that cavity, produced the ſenſe of hearing.

The inveſtigations of this anatomiſt have placed that matter in a clear light, and have ſhewn that, inſtead of air, it contains water. In the year 1761 he publiſhed a treatiſe at Naples under the following title, *De aquæductibus auris humanæ internæ*; in which he proved that there is no air contained in the labyrinth, and that its natural content is water; but he does not ſeem to have had the cleareſt idea of the ſource of this fluid.

He

He imagined that the two canals which paſs from the labyrinth to the inſide of the cranium, called aquæductus veſtibuli and aquæductus cochleæ, conveyed this fluid from the inſide of the cranium into the labyrinth; but Dr. Meckel, the preſent profeſſor of anatomy at *Halle*, has ſhewn, with more probability, that theſe canals ſerve as outlets, and that their true office is to prevent a ſurcharge. The labyrinth, beſides being lined by an expanſion of the auditory nerve, is likewiſe furniſhed with a very vaſcular membrane, probably for the purpoſe of ſecreting this water. But whatever opinions may be formed on this point, it is demonſtrable that water is the proper fluid of this part, and that by its means the vibrations of ſonorous bodies are conveyed with greater force to the auditory nerve than can poſſibly be done by the lighter fluid air; for although both air and water are from their fluidity capable of having a very perfect inteſtinal motion excited in them, yet the force with which theſe fluids ſtrike againſt the nerve will be in proportion to their reſpective denſities.

But in the preſent caſe there was no fluid of any kind; its place was ſupplied by a ſolid ſubſtance,

ſubſtance, which, being incapable of receiving ſo perfect a vibratory motion, was unable to produce its proper effect on the immediate organ.

In recording the appearances on diſſection the diminiſhed ſize of the auditory nerve was noticed. Is this to be conſidered as a cauſe of deafneſs, or as an effect? I ſhould imagine the latter. For if it were the cauſe, we ſhould naturally expect the effect to be in proportion; and inſtead of a total deafneſs, there ſhould have been only a partial one. It is moſt probable that its connexion, in this caſe, is only an effect; for it is a law in the animal economy that parts increaſe in bulk from moderate uſe, and become diminiſhed from the want of it. This is very evident in the muſcles, where, from a diſeaſed joint which prevents motion, the whole limb is obſerved to ſhrink.

I have known the ſame thing take place in the optic nerve, where there had been an accidental blindneſs. I ſhould therefore conſider this as the effect, and not the cauſe.

ARTICLE

ARTICLE II.

A remarkable Inſtance of Recovery of Sight, by the Diſperſion of a Cataract, which had occaſioned Blindneſs in one Eye for Eleven Years. The Caſe deſcribed, with Hints grounded on it as to the Mode of Cure in ſimilar Complaints:

By JAMES WARE, Surgeon, F. M. S.

Read October 27th, 1789.

A. L. a merchant at Quebec, in October 1776, when he was about twenty-nine years of age, received a blow on his left eye by a ſplinter of a ruſty chiſſel, which ſtarted from it as he was ſtriking it with a hammer. The only bad effect, which he at firſt felt from this accident, was a momentary pain in the eye, and which, though acute for the preſent, ſoon went off, without the aid of any medical application whatſoever. As the patient had

had then the ſame uſe of this eye as before, for all the common purpoſes of life, and was even able to read with it, he had not, at this time, the ſmalleſt apprehenſion of experiencing any further material injury from what had happened. It was not, however, long, before he became ſenſible of ſome degree of obſcurity in the ſight of it; and from that time the dimneſs gradually increaſed, till, in leſs than ſix months after, he found himſelf deprived of all further aſſiſtance from this eye, than to be capable of diſtinguiſhing the ſtrong light of day from the darkneſs of night. In the progreſs of the diſorder, the eye was examined by two gentlemen of the faculty at Quebec, Dr. M'Namara Hayes and Dr. Kennedy, neither of whom, at firſt, could perceive any opacity in the chryſtalline, though afterwards it became very evident to them both. At the firſt appearance of the complaint, theſe gentlemen adviſed the patient to take ſmall doſes of mercurius dulcis; but perceiving no good effects to be produced by the uſe of this medicine, it was ſoon laid aſide. In the year 1777 he came to England, and here conſulted the late Dr. Fothergill, who, on examining the eye, entirely

concurred in opinion with the phyſicians before mentioned—that the chryſtalline humour was opaque;—but, as the ſight of the right eye continued quite perfect, the doctor's advice was, not to meddle at all with the other for the preſent. He returned to Quebec in the year following, and there remained in the ſame ſtate of blindneſs, with the left eye, till the year 1787, when he again came to England. On the 7th of April, 1788, whilſt on this ſecond viſit here, he was attacked with a violent pain in his head, which particularly affected him acroſs his forehead. In the middle of the following night a pain ſeized him in the diſordered eye, which, when he roſe in the morning, appeared to to be conſiderably inflamed; as was the other, alſo, though in a much leſs degree. The latter complaint, however, ſeemed gradually to abate of itſelf till the 14th, when it returned again with great violence in both eyes. At that time, the pain in the left eye was particularly ſevere, and extended over the temples and forehead. The following remedies were now uſed. The patient was let blood in the arm; bliſters were put behind his ears; a fomentation of chamomile flowers,

flowers, mixed with laudanum, was applied two hours every day to the eyes; and laudanum draughts were given to procure him reſt at night. But theſe means, however proper in themſelves, and uſeful in their tendency, did not, for the preſent, meet with the ſucceſs which might have been expected from them. For, notwithſtanding all, the inflammation and pain continued to rage with violence a week longer. Then it was that the patient, for the firſt time, perceived the light with the left eye ſtronger than before; and in a day or two after, to his great ſurpriſe, the ſight of this eye improved ſo much as to render him capable of diſtinguiſhing with it ſeveral large objects that were near him. The inflammation, at that time, though it had in part ſubſided, was ſtill conſiderable in both eyes; but, continuing gradually to abate, in three weeks it went off entirely; when, not only, the ſight of the right eye became as perfect as ever, but that of the other, which had been quite loſt eleven years, was ſo much further recovered, that the patient was able to diſtinguiſh all large objects; even thoſe which were at ſome diſtance, as well as thoſe which were near.

The great progreſs made in the cure of this eye was alſo very diſcernible in its appearance. For the chryſtalline humour, inſtead of being opaque as it before was, now reſumed its natural clearneſs and tranſparency; and, in this reſpect, it was not to be diſtinguiſhed from that of the eye which had always remained ſound. There were yet, however, thoſe remaining defects in the left eye, which made the patient very deſirous of taking further advice, to ſee if any thing more could be done towards reſtoring the full uſe of it. Accordingly in the month following I was deſired to examine it. I found, notwithſtanding the chryſtalline humour of this eye had recovered its tranſparency, that the pupil was ſtill larger than its natural ſize; and though it regularly performed the office of contraction and dilatation, according as the light acted upon it, yet the iris had conſtantly, beſides this, a tremulous motion, ſimilar to that which I have not unfrequently obſerved it to acquire, after the operation of extracting the cataract. In caſes of the latter kind, it ſeems to be occaſioned by the loſs of ſupport which the poſterior part of the iris ſuſtains, in conſequence of the

removal

removal of the chryſtalline humour; and though in the caſe I am now deſcribing, no ſuch operation had been performed, yet no other account is I think to be given of this ſimilar motion in the iris, but that it is owing to the weak ſupport it derives, from the parts ſituated behind it. As to the uſe which the patient had of this eye, I found on inquiry, that though he had ſome diſcernment of all large objects, and of not a few a tolerably diſtinct one, yet he was far from ſeeing them, with the ſame degree of perfection, as with the other eye; and, with the diſordered one, he was not yet able to diſtinguiſh, to any degree of preciſion, even large letters in a book. Having attended to every point of information which I had gained, both from the patient's account and my own examination, it appeared to me more than probable that the chryſtalline humour was completely diſſolved; and this I believed to be the occaſion, not only of the tremulous motion in the iris before noticed, but likewiſe of that defect in ſight, of which the patient ſtill complained. I was clearly of opinion, alſo, that this defect could be no otherwiſe remedied, than by the uſe of a proper glaſs, to act as a

ſubſtitute for the diſſolved humour. In this judgment of the caſe, I was ſoon fully confirmed; for, upon deſiring the patient to make the experiment, with a convex glaſs of five inches focus, on looking through it, he immediately diſtinguiſhed diſtant objects equally well with the affected as with the ſound eye. I then made a further experiment, with a convex glaſs of only two inches and a half focus; on the uſe of which, he received ſo much additional aſſiſtance, that he could read with eaſe a common newſpaper*. Soon after this time he returned to Quebec, the place of his reſidence; ſince which I have received no particular information with regard to his ſight; but there is good reaſon to believe, he ſtill retains it, in the ſame degree of perfection, as when he left England.

Having ſtated the leading particulars of Mr. L's caſe, I beg leave to ſubjoin one or two remarks upon it. The immediate cauſe of the blindneſs in conſequence of the blow

* I was led to the trial of the convex glaſſes above deſcribed, from their having been found to ſuit moſt eyes, after the removal of the chryſtalline, by either of the uſual operations. The glaſs with the larger focus for more diſtant objects, and the ſmaller for ſuch as were near.

on

on the eye, as above mentioned, was, undoubtedly, that of an opacity in the chryſtalline humour. This is now univerſally underſtood to conſtitute the true cataract. And I perſuade myſelf, moſt gentlemen of the faculty would have pronounced the ſight of an eye, in ſuch a ſtate of blindneſs, to have been altogether irrecoverable, but by one or other of the uſual operations, of couching, or extraction. But in the caſe I have been deſcribing, no operation was ever performed, or intended. In reſtoring the uſe of the eye, which for ſo many years Mr. L. had totally loſt, Nature herſelf ſeems to have done the chief part of the buſineſs by the inflammation, brought on, in conſequence, as was ſuppoſed, of a cold, which the patient caught. For, by means of the ſeveral remedies, already mentioned in deſcribing the caſe, and which are commonly made uſe of under ſimilar inflammatory complaints, aided by the ſtate of action, into which the eye was thrown by the inflammation itſelf, not only this inflammation was ſubdued, but the opacity of the chryſtalline humour was gradually diſſipated; till, with the reſtoration of tranſparency in appearance, the ſight of the eye was alſo re-

covered. This remarkable change which took place in Mr. L's eye, and the great utility of the inflammation, toward promoting ſo deſirable an event, ſuggeſted the thought of an inquiry, both into the ſafety, and expediency, of employing art, to raiſe an inflammation, as the firſt ſtep to a cure in ſimilar caſes of blindneſs; and, ſuppoſing it a ſafe meaſure, what means would be beſt adapted for this end. Theſe were the two points, which I had all along in view, by the recital of the caſe; and to theſe I would principally direct the attention of the ſeveral members of this Society. Could the experiment be tried, without incurring further danger to the patient, it might iſſue in the eſtabliſhment of a mode of cure, which, whilſt it was equally efficacious, would undoubtedly appear leſs formidable, than the operation now commonly adviſed under complaints of this nature.

A SUPPLEMENT

A SUPPLEMENT *to the preceding Paper:*

By the ſame AUTHOR.

Read JUNE 7th, 1790.

SINCE the preceding paper was read before the ſociety, I have ſeen two other caſes of cataracts, ſimilar to that above deſcribed, in both of which the opacity was diſſipated, and the patients recovered their ſight, without ſubmitting to any chirurgical operation.

One of theſe was that of a woman, fifty nine years of age, the ſight of whoſe left eye had gradually decreaſed for ten years; and, during the laſt twelve months, a cataract had been completely formed, and ſhe had been unable to diſtinguiſh, with this eye, any thing more than the difference between day and night. Notwithſtanding this extreme degree of blindneſs, and the ſtrong probability of her recovering ſight by having the cataract extracted, I always thought it my duty to diſcourage her from ſubmitting to the operation; becauſe, though the chryſtalline of the

right eye was alſo manifeſtly affected, yet it ſtill retained ſufficient tranſparency, to admit of an uſeful ſight. In February laſt this woman was ſtruck by a ſplinter of wood on the upper lid of the left eye, with ſuch force, that it nearly pierced through it, and occaſioned a conſiderable hemorrhage. The eye was almoſt inſtantly made ſenſible of an uncommon and unpleaſant bright light; and, the following day, when I examined it, the pupil was become quite clear. It regularly dilated and contracted, according to the degree of light to which the eye was expoſed; and the iris had, likewiſe, the ſame ſort of tremulous motion, which I have deſcribed in the preceding caſe. The patient had ſuffered no pain ſince the accident, and the tunica conjunctiva was ſcarcely at all inflamed. I deſired her to look through the convex glaſſes, that are commonly found uſeful, after the removal of the chryſtalline humour; and by the aſſiſtance of theſe, ſhe diſtinguiſhed both near and diſtant objects equally as well as before the ſight was at all affected.

The other caſe was that of a lady, ſeventy-ſix years of age, whoſe right eye, in conſequence of an opacity in the chryſtalline

humour,

humour, had been incapable of diftinguifhing objects more than fix years; and the left eye, from the fame caufe, more than three. In July 1789 I extracted a cataract of a very firm confiftence from her left eye, in the ufual manner, without any particular difficulty; immediately after which, fhe perceived a number of objects placed before her. I intended, at the fame time, to have performed a fimilar operation on the right eye, but the patient's extreme agitation rendered this improper. The ufual compreffes and bandage were therefore now applied, and fhe was removed to her bed. No accident afterwards occurred, during her confinement, that merits a recital; and at the end of ten days, on taking off the applications, and opening the lids, the patient, to my great furprize, not only perceived all objects before her, with the left eye, from which the cataract had been removed, but alfo with the right eye, upon which no operation of any kind had yet been performed. She now informed me, that, almoft immediately after my firft examination of her eyes, three days previous to the operation on the left, the right eye became fenfible, of a very great difference in

the ſtrength of the light; and, though I had not then done any thing more to it, than to open and ſhut the lids, a few times in quick ſucceſſion, in order thereby to learn the ſtate of the pupil, yet the alteration in the ſight of the eye, even the ſame day, was ſo great, that ſhe could ſcarcely perſuade herſelf, I had not performed an operation upon it. After the operation on the left eye, both eyes gradually gained ſtrength; they equally received benefit from the uſe of convex glaſſes; and the only difference which the patient perceived, between the ſight of the right eye, and that of the left, was this, that objects, viewed with the right, appeared tinged with a yellow colour; whereas, when looked at with the left, they preſerved their uſual appearance. This difference in the ſight did not go off; and at the end of ſome months, on examining the right eye, I found that, notwithſtanding the upper part of the pupil appeared perfectly clear, the lower part, comprehending nearly half of this aperture, was ſtill obſcured, by a conſiderable opacity; the ſituation of which, whether it was in the chryſtalline, or in its capſule, I am not at preſent able to determine.

ARTICLE

ARTICLE III.

Influenzæ Deſcriptio, Auctore Gulielmo Falconer, M. D. F. R. S. et C. M. S. uti nuper comparebat in Urbe Bathoniæ Mens. Julio, Auguſto, Septembri, Ann. Domin. 1788.

Perlecta Dec. 1, 1788.

Incepit ſenſu frigoris, horroris, rigoris, cephalalgiâ, præſertim in Vertice capitis, cum teneritudine œſophagi. Huic ſucceſſit exſcreatio difficilis ſputi, viſcidi, craſſi cum tumore gutturis et faucium, et difficili deglutitione, vix tamen ullâ teneritate per deglutiendum. Lingua, brevi arida et rubra facta eſt, quaſi ſiccâ et craſsâ cuticulâ tecta, et tumida valde, ita ut vix extendi ultra labia poſſet. Obſtructio deglutiendi videbatur locum ejus habere infra radicem linguæ, et ultra gargariſmatis contactum. Fauces inſpectæ colorem coccineum dedere, nullæ autem apthæ aut maculæ apparuere. Elocutio impedita ob tumorem linguæ, nulla autem virium muſculorum, qui voci inſerviunt, jacturâ.

Pulſus

Pulſus celer, ad 120 in ſing. minut. aut amplius, et ſi venæſectio omiſſa fuerit per dies paucos morbi initio, intermittens fiebat. Calor cutis magnus, haud autem ad tactum pungens, uti in febribus malignis. Cutis arida dum morbus prævalebat, cedente autem morbo diaphoreſis ſupervenit. Vires corporis haud tantum diminutæ quantum alia ſymptomata minari videbantur. Delirium et cephalalgia nulla, ſomnus autem valde interruptus, et in nonnullis vigilatio integra. Appetitus ad cibum quamvis diminutus, non autem deletus, ſi cibum aſſumere permiſiſſet difficultas deglutiendi, quæ nihil niſi liquida, et illa non niſi labore multo, tranſire per œſophagum admiſit. Oculi vix affecti. Alvus ſtricta potius, ſed catharticis facile cedens. Urina turbida per acmen morbi, et ſine ſedimento ullo; ad finem autem, ſedimento largo griſeo. Tuſſis in nonnullis, ſed non vehemens, exſcreatio muci, aut potius conatus ad exſcreandum, ſæpiſſime repetitus, et fere conſtans, dyſpnæa nulla.

CURATIO.

CURATIO.

Antimonialia uti pulv. Antim. Lond. et Tartarum emeticum in hoc morbo imprimis experta fuere; fateor autem quod ſpem meam haud adæquarent, quamvis ſæpe repetita, et doſi ſatis magnâ. Alvi dejectiones modice excitabant, ſed levamine morbi parvo. Exhibui pulv. Antim. Lond. gr. vi, tart. emetic gr. $\frac{1}{3}$ ſextis horis per triduum ſine ullo alio effectu quam prædicto, ſudor nullus, et nauſea vix ulla. Ipecacuanha autem cum tart. emetico miſta magis valebat, et hæc medicamenta commiſta auſus ſim dare ubi deglutitio voluntaria prorſus impedita fuit. Linguæ enim ſuper, impoſita, in ventriculum gradatim deſcendere et vomitum excitaverunt, imprimis dolore magno, ſenſim autem diminuto, ita ut brevi, deglutiendi ſatis facile, reſtituta poteſtas fuit.

Venæ Sectio apprime utilis et neceſſaria fuit, etiam repetita bis terve aut ſæpius; craſſamentum incurvum ſuperficie tegulam exhibens flavo-albam, craſſam, tenacem. Enemata maxime utilia et plus adjuvamenti adferre videbantur quam cathartica per os data. Scybala

bala enim multa in inteſtinis inferioribus ſæpe congeſta fuere, hæcque educendo ſymptomata maxime urgentia mitigata fuere. Clyſteres ex juſculo, vel decocto avenaceo aut lacte, cum oleo et ſaccharo rubro, votis reſpondere melius videbantur, quam magis ſtimulantes. Gargariſmata maximè neceſſaria fuere, hæc enim niſi uſitata fuere, ſuffocationis periculum erat. Aſtringentia et Tonica huic intentioni reſpondêre melius quam emollientia et inſipida. Hoc conſilio præſcripſi tincturam roſarum cum melle roſar. commiſt. et non abſque magno commodo. Brevi attamen apparuit vinum rubrum luſitanicum, aquâ dilutum, magis guſtui placere et viribus æquipollere. Vapor aquæ bullientis cum aceto per tubulam in fauces receptus nonnihil profuit; ſpiritus nitri dulcis drachmæ unius, vel duor: ſcrupul. doſi aſſumptus, vires diaphoreticas nonnullas poſſidere videbatur. Veſicatoria experta fuere, ſed ſpei noſtræ parum reſpondebant, mali tamen nihil afferentia. Epiſpaſtica autem uti ſp. ſal. amm. cum calce viva cum oleo olivar. commiſt. et cautè applicata panno laneo circa collum utilia fuere. Plus autem commodi ferebant hirudines, ſex vel octo, externe applicatæ

plicatæ gutturi et faucibus. Hæ cito deglutitionem faciliorem reddidere et ſymptomata maxime urgentia mitigavere. Pediluvium tepidum aut frigidiuſculum potius, ſolamen haud parvum ægris ferebat, quietem, ſaltem, ſi non ſomnum promittens, præſertim ſi horâ ſomni utebatur. Opium, in morbis catarrhalibus laudatiſſimum remedium, in hoc ſpem meam fallere videbatur? Quietem, ut fateor, tulit, ſed linguæ ariditas, exſcreandi difficultas, calor externus, et pulſûs celeritas auctæ fuere. Imprimis in hoc morbo neceſſarium erat ad nutrientia reſpicere. Lac aſininum et potus tenuis ex cacao confectus cochleatim ſumpti non modo cibi ſed etiam medicamentorum vicem ſupplere videbantur, laxando et emolliendo fauces ſiccas et linguam aridam. Aera cubiculi modicè frigidiuſculum ſervare utiliſſimum, et veſtium, et ſtragularum mutatio frequens, haud minus commodi quam ſolatii ægris adtulit.

In nonnullis tumor ſublingualis ad ſuppurationem pervenit, et magna copia puris, etiam ad uncias ſeptem vel octo evacuata fuit cum magno levamine omnium ſymptomatum morbi.

ARTICLE

ARTICLE IV.

An Account of the Epidemic Catarrh, (termed Influenza), as it appeared at Northampton, and in the adjacent Villages, in 1775; *with a comparative View of a ſimilar Diſeaſe, as it was obſerved in London, and its Environs, in* 1782:

By ANTHONY FOTHERGILL, (of Bath.) M.D. F.R.S. and C.M.S.

Read April 7th, 1788.

About the middle of November, 1775, it began to make its appearance at Northampton, and ſoon became more general than any other Epidemic within my remembrance. Thoſe who were moſt expoſed to the open air were generally firſt attacked.

This I experienced in my own perſon, and that to a conſiderable degree for ſeveral days; being at this time much abroad, and having neither leiſure nor inclination to ſubmit to confinement, the diſeaſe was imprudently left to run its courſe. The ſymptoms I felt in common with many other fellow ſufferers, for whom I was concerned, were chiefly as follow:—A ſenſe of laſſitude and heavineſs,

 accompanied

accompanied with a general chilneſs and increaſed ſenſibility over the whole ſurface, eſpecially on the approach of cold air, or the contact of cold bodies; ſlight tranſient pains in the head and limbs; a watery diſcharge from the eyes and noſe; an evident feveriſh habit, but no ſhivering nor intenſe heat; a ſlight nauſea, but no vomiting nor averſion to food.

To theſe ſucceeded, on the ſecond day from the attack, a ſevere cough, attended with hoarſeneſs and ſome degree of ſore throat; a ſenſe of tightneſs and oppreſſion in the cheſt; an accumulation of viſcid phlegm, and difficulty of reſpiration; tongue moiſt and but little diſcoloured; pulſe generally about ninety in a minute, full and ſomewhat unequal; thoſe Practitioners, who had recourſe to the lancet, often obſerved the blood to be covered with buff, but not very denſe, or contracted on the ſurface; urine higher coloured than natural, often turbid and without ſeparation; ſtools of a duſky brown hue. Some ſuffered conſiderable pain in the hypocondriac regions, attended with diarrhœa; others had a ſevere pain in one ſide of the face, affecting the teeth and ears, and returning pe-

riodically

riodically at a certain hour in the evening, or about midnight, attended with vertigo, delirium, and limpid urine, during the exacerbation. Some, whose cases were complicated with the above symptoms, had a general rash, but without its proving critical. But the most urgent symptom that distinguished this epidemic constitution, was the *cough*, which prevailed through the whole disease, and often remained obstinate after the other symptoms had entirely disappeared. Its attacks were extremely various in different habits; some persons pursued their daily employment, and speedily recovered without the assistance of medicine; others were obliged to use remedies, and even to keep their beds for several days.

People of sound habits, whose appetite was not impaired, who expectorated freely, and perspired moderately, or who had a critical diarrhoea, soon became well: on the other hand, asthmatic and hectic patients, and those of weak lungs, from whatever cause, were forced to submit to confinement at an early period; were very liable to relapse on taking the least cold; and, if far advanced in years, or had neglected the disease at the beginning, either

recovered

recovered very ſlowly or finally ſunk under the diſeaſe.

Young children ſuffered conſiderably leſs than thoſe of riper years, and generally recovered ſooner than adults. Young perſons of both ſexes between eighteen and thirty-ſix, of irritable habits, were often brought into the moſt imminent danger from the vehemence of the cough. Some dropped down in the fit and lay for ſome minutes in a ſtate of inſenſibility, or ſuffocation. Others had effuſions of blood from the lungs; and ſome females of irritable habits have, during catemenia, undergone ſuch violent fits of coughing as to be thrown into univerſal convulſions: of which I have ſeen more than one inſtance, where the convulſions were ſo vehement that four ſtrong people were ſcarcely able to keep the patients in bed. But theſe at length recovered by the uſe of proper remedies. During this epidemic conſtitution, there have been many inſtances of palſies and ſudden deaths; rheumatiſms have alſo been very frequent, and other chronic diſeaſes aggravated. Many of thoſe who eſcaped the catarrh have been more or leſs ſenſible of giddineſs, or pains in the head or face.

 Among

Among the cafes of this kind, that have fallen under my obfervation, I have remarked that the urinary and alvine difcharges have had the fame appearance as among thofe who laboured under the catarrh. In young plethoric habits, the treatment of this epidemic, which appeared to anfwer beft, confifted of moderate bleeding and mild laxatives, where the ftrength of the patient and ftate of the pulfe would permit. But, in general, mild diluents with gentle diaphoretics and demulcents; the keeping the body warm and allaying the cough by paregoric elixir, were alone fufficient to the cure without having recourfe to the lancet. In cafes abounding with glutinous and vifcid phlegm, emetics, followed by the ufe of afafœtida, ammoniacum, oxymel of quills, attenuating pectoral fumigations, and epifpaftics, contributed not a little to expedite the cure. It ought to have been mentioned, that this diftemper prevailed fome time among horfes before it attacked the human fpecies. The cough haraffed them feverely, and rendered them unfit for work, though few died. About the fame time it alfo infefted the canine fpecies, and with greater

 fatality,

fatality, eſpecially hounds. An experienced huntſman informed me that it ran through whole packs in many parts of England, and that ſeveral dogs died.

Were we to attempt to inveſtigate the cauſe of this epidemic, it would perhaps be very difficult to fix on any ſingle circumſtance ſufficient to explain it. The ſeaſon preceding the appearance of this diſeaſe, and during its courſe, was remarkably mild and ſteady, the barometer and thermometer remaining for ſeveral weeks almoſt ſtationary. The corn harveſt was plentiful, the autumnal fruits and farinaceous and eſculent plants were in great abundance, but of moderate quality, and more prone to decay than uſual. A ſimilar epidemic in the autumn of the year 1758 prevailed in Scotland, of which there is an account drawn up by ſeveral gentlemen of the faculty, and recorded in the third volume of the Medical Inquiries. It began about a month earlier than the preſent diſeaſe; was preceded by a ſimilar ſtate of weather, was attended with the ſame ſymptoms, and was relieved by the ſame method of treatment. Like this, it made its firſt attack on quadrupeds, before

 it

it invaded the human ſpecies. Both theſe epidemics ſeized whole families on the ſame day, often remote from one another, and without any intercourſe. Hence it was generally ſuppoſed to originate from ſome ſecret influence of the atmoſphere, though there were not wanting inſtances wherein it appeared to be propagated by contagion. For it could in no wiſe, like a common catarrh, be attributed to cold moiſture, or ſudden changes of temperature, ſeeing that both epidemics began and increaſed during an uncommonly mild and ſteady ſeaſon; and the latter, I obſerved, was at the worſt when the weather was the mildeſt, nor did it wholly diſappear till after the froſt commenced. Neither can we ſubſcribe to the opinion of thoſe who attributed the diſeaſe to inſects in the air. In ſupport of this doctrine, they relate an experiment of a paper kite beſmeared with treacle, which, after floating in the air, on its deſcent, was found covered with minute animalcules. But, admitting the fact, it only proves that the air, in a mild autumn, abounds with inſects, of which no one, I believe, ever entertained a doubt.

Were inſects really productive of the diſeaſe, we might naturally expect a return of the influenza every autumn. Beſides, had it originated from this cauſe, it would rather, one would imagine, have been of the putrid kind; whereas, inſtead of a putrid, it had evident marks of an inflammatory diatheſis, and was treated moſt ſucceſsfully by the cooling antiphlogiſtic regimen. As the diſeaſe, then, cannot fairly be aſcribed to cold, or any ſenſible property of the air, much leſs to inſects, I fear we muſt content ourſelves, at leaſt for the preſent, with referring it to certain *miaſmata* generated in the air, whoſe nature is wholly unknown, and concerning whoſe qualities we muſt be obliged to ſuſpend our judgment, till the hiſtory of the atmoſphere is better underſtood. The reſearches which have lately been carrying on with ſo much ſucceſs concerning ærial fluids, encourage us to hope that the ſubtile principles of miaſmata and contagion may, perhaps, one day be developed.

Having thus ſketched out the leading features of the influenza of 1775, it may not be improper to contraſt it with that

 of

of 1782, from whence it will more clearly appear wherein theſe two epidemics agreed, and wherein they ſeemed to differ.

The influenza of 1775, as we have ſeen, was preceded by a mild ſerene autumn; that of 1782, by a cold wet ſpring. The former commenced about the middle of November, the latter about the middle of May. Both of theſe epidemics broke out at various remote places nearly about the ſame time, and pervaded whole families, attacking a greater proportion of grown perſons than children. Both had reached China, and other Eaſtern countries, though their origin could not be traced to any particular diſtrict, nor did they appear to have obſerved any regular courſe in their progreſs. They ſeized ſome perſons at ſea, while others were attacked on ſhore, and that without any perceptible communication. In ſome inſtances they ſeemed to be propagated by contagion, in others not the ſmalleſt ſuſpicion of contagion could be entertained. Whatever diſtrict they invaded they ſeized perſons of different ages, ſexes, and conſtitutions, but generally finiſhed their career in about ſix weeks. Their attack commenced with ſlight rigors, or alternate chills and heats,

heats, inceſſant cough, pain and conſtriction of the forehead, ſenſe of heat and excoriation in the windpipe, attended with a peculiar languor and depreſſion. Theſe were the characteriſtics of both, however the ſymptoms might differ in degree. In the influenza of 1775, the cough ſeldom was troubleſome till the ſecond day of the diſeaſe, whereas in that of 1782 it commenced at the onſet, and was generally accompanied by ſneezing. The pain of the forehead and general languor ſeemed alſo more diſtreſſing. The cough in both epidemics continued long after the febrile ſymptoms had ceaſed, and ſometimes terminated in a fatal phthiſis. Medical reports indeed aſſure us that this event very rarely, if ever, happened, except in old aſthmatic caſes, or worn out conſtitutions; the bills of mortality, however, under the head of fevers, ſeem to ſpeak a different language; and the increaſe of funerals both in town and country, during theſe periods, and particularly in 1782, evidently proves that the influenza, or its conſequences, occaſioned greater fatality than practitioners were aware of, or diſpoſed to allow. Nor is this to be wondered at, ſeeing that the faculty

were ſo greatly divided in their opinions concerning the nature and treatment of the diſeaſe. The inflammatory and putrid diatheſis were often ſo nicely blended, that the ableſt practitioners ſometimes doubted where to draw the line. Accordingly we find that thoſe who inclined to the former idea, conſidered it as an inflammatory catarrh, whereas thoſe who adopted the latter opinion, conceived it to be a putrid, or contagious fever. Hence while the former enjoined bleeding and evacuants, the latter inſiſted on the uſe of wine and cordials.

If we look back to the annals of phyſic, we ſhall find that an epidemic catarrh has viſited this country, at different periods, through a long ſucceſſion of ages. It is recorded to have made its appearance in the years 1510, 1557, 1580, 1587, 1591, 1657, 1709, 1733, 1743, 1762, 1767, 1775, and, laſtly, in 1782 *. Whence it ſeems that the diſeaſe has returned at uncertain intervals, but much more frequently of late than formerly. For during the firſt long period of two hundred and fifty-two years, it is ſaid to

* Tranſactions of the Royal College of Phyſicians of London, Vol. III. p. 54.

have

have recurred only eight times, which on an average is only about once in thirty-one years, whereas during the laſt twenty years it has reviſited us four times, which amounts to once every five years. As ſeven years have already elapſed ſince its laſt viſit, we may probably expect to ſee it again at no very diſtant period. Hence it becomes an object extremely worthy the attention of the faculty; and it is much to be regretted that, till within theſe twenty years, we have had no accurate hiſtory of this diſeaſe, whoſe origin is probably of very high antiquity. It is doubtleſs one and the ſame malady at all times and in all places, though liable to variations in conſequence of the ſtate of the animal juices, and other concomitant circumſtances, Thus the epidemic of 1775 ſeems to have been of the ſame ſpecies with that of 1782, only its ſymptoms ran higher, and the cough affected the nervous ſyſtem with greater ſeverity; this could not be attributed to the inclemency of the ſeaſon, which proved uncommonly mild and temperate, to the utter confuſion of our wonted metereological concluſions.

It

It is truly remarkable with what obſtinacy and perſeverance epidemic diſeaſes in general run their courſe, and purſue their characteriſtic phenomena through all the varieties of climate and viciſſitudes of ſeaſon. This perhaps may be accounted for from their originating from a ſpecific poiſon imbibed from the atmoſphere, or generated in the body, which is probably always the ſame independent of heat and cold, or other ſenſible qualities of the air.

The particular ſtate of the ſyſtem into which the poiſon is received appears to me to determine its operation, and to diverſify its effects on individuals in a much higher degree than the weather or any other external circumſtance. Thus ſuppoſe two children born of the ſame parents, and nearly of the ſame age, are inoculated at the ſame time with the ſame variolous matter, and treated exactly in the ſame way; one ſhall have a diſtinct benign ſmall pox, terminating in the moſt favourable manner; the other an ill conditioned ſort, ending in a fatal empyema. Such a caſe not long ago actually fell under my own obſervation, and the only

difference

difference that could be perceived, previous to the diſeaſe, was that the former child was healthy and *clear-ſkinned*; the latter weakly and liable to ſlight *eruptions*. Yet ſometimes children whoſe ſkin is almoſt covered with eruptions undergo inoculation with remarkable ſucceſs, or even paſs through the natural ſmall pox as happily as thoſe who never ſhewed any viſible ſign of acrimony. Hence it appears that our knowledge of the animal fluids is almoſt as limited as it is concerning the atmoſpheric influence cauſing the influenza and other epidemic diſeaſes.

ARTICLE

ARTICLE V.

Hiſtory and Diſſection of a fatal Caſe, attended with a painful Affection of the Head. By J. C. LETTSOM, M. D. *&c. with the Diſſection, by* J. WARE, *Surgeon, and* F. M. S.

Read AUGUST 3, 1789.

DEPUTY H**, the gentleman who is the ſubject of this hiſtory, early in the year 1789, had a troubleſome cough, which had frequently attended him in former winters, and diſappeared on the approach of warm weather. At this time, however, he had alſo a ſlight head-ach, and occaſionally a ſickneſs and vomiting.

The uſual remedies for a cough were employed with relief, but the head-ach, ſickneſs, and vomiting, were not mitigated. On the 26th of January he took an emetic, which evacuated much bilious matter; and afterwards a laxative was adminiſtered. Some feveriſh heat ſupervening, ſix ounces of

of blood were taken from the arm; a ſaline mixture was ordered, and at night an anodyne draught.

On the 27th a phyſician was conſulted, who preſcribed the tincture of caſtor and volatile ſpirit to be taken every four hours. This medicine having been vomited, and the phyſician not attending, the apothecary gave an alcaline draught with lemon juice in the act of effervefcence, and at night an anodyne medicine, which the patient afterwards always aſked for, as the only remedy from which he ſenſibly experienced any relief.

On the 30th of January I met the apothecary, and found the patient, from gradually increaſing debility, confined to his bed, complaining of an heavy dull pain of the head, the ſeat of which he pointed out by placing his hand on the poſterior extremity of the os frontis; on turning in bed, ſickneſs always enſued, and ſometimes vomiting of thin mucus, rarely of bilious matter; by preſſing my hand on the region of the liver, he complained of no pain, nor did there appear the leaſt turgeſcence of this viſcus; the tunica albuginea was reddiſh or ferrety; light gave uneaſineſs; the pupils ſeemed to be in a natural

tural ſtate; the pulſe was regular, rather full, and did not exceed fifty ſtrokes in a minute. This ſlowneſs of the pulſe, joined to the ſickneſs, which did not ſeem dependent on the hepatic ſyſtem, and the pale, limpid ſtate of the urine, induced me to ſuſpect that the head-ach originated from local affection of the brain, and that the ſickneſs was ſymptomatic of it; upon mentioning my opinion, I found that the apothecary had not been without the ſame doubts, and he hinted alſo the circumſtance of a fall which happened to the patient three weeks before, who, in attempting to get into a coach, ſlipped down on his ſeat, but afterwards got into the carriage without noticing any indiſpoſition or inconvenience.

I ordered him to lie in bed with the head elevated, to have a bliſter applied inter ſcapulas, to take an infuſion of colombo, and at night a calomel pill with the opiate.

On the 31ſt Dr. Saunders was alſo conſulted, who confirmed the ſuſpicion of preſſure on the brain; and we agreed to have the head ſhaved and embrocated with camphorated ſpirits of wine; to apply four leeches to each temple, and to repeat the anodyne bolus

at

at bedtime, and through the day to give a ſaline laxative draught every four hours: the pulſe on this day was as quick as ſixty, fuller and harder.

February 1. The pulſe was ſeventy-ſix, and leſs full. A purgative draught was ordered, with half a ſcruple of the pulvis e ſcammonio compoſitus. He took alſo the infuſum roſæ every four hours; and at night a bolus of half a ſcruple of confectio Damocratis. A bliſter was applied to the head.

Feb. 2. He had many copious ſtools, and ſeemed much debilitated; but the pulſe beat eighty-two ſtrokes in a minute, without increaſed heat or fever; the head-ach and ſickneſs, however, continued much the ſame, as well as the ferrety look of the eyes, and their ſenſibility to light. He was ſo reſtleſs at night, that the apothecary, upon being called up, gave an opiate: the ſenſes were perfect, but recollection was dull and ſlow. A ſaline draught was ordered with a ſcruple of confectio Damocratis every four hours.

Feb. 3. He had a reſtleſs night, the pulſe was about the ſame degree of quickneſs, but much weaker: dulneſs of apprehenſion was greater, and ſome degree of rambling came on.

on. A mixture with confectio aromatica was occasionally given, and the same draught continued with the addition of thirty drops of thebaic tincture at bedtime.

Feb. 4. Delirium and frequent incoherent muttering prevailed; with subsultus tendinum; and a slight strabismus, but no dilatation of the pupils. The same medicines were continued with the addition of a clyster.

Feb. 5. All the symptoms were augmented: the pulse was irregular and fluttering, and stupor and low muttering were increased. Blisters were applied to the legs; and the musk julep, and a solution of myrrh, ordered to be taken frequently.

Feb. 6. Upon repeating our visits on this morning, the patient appeared to be in articulo mortis, and we expressed as much to the family. It was, throughout the attendance, our anxious wish, should the disease prove fatal, to examine the contents of the cranium; and the following incident rendered it immediately requisite:

The affectionate wife, disconsolate and almost frantick with anxiety, was prevailed upon to send the urine of the patient to a

noted quack, who pretends to aſcertain and cure diſeaſes by inſpecting the patient's urine; and who, on the preſent occaſion, declared that the diſeaſe was in the kidney; an aſſertion ſo contrary to the opinion of two phyſicians, afforded an impreſſion on the mind, that the ſeat of the diſeaſe had been miſtaken, and the empiric was deſired to viſit the patient; which he did, and repeated his former aſſertion, and that the diſeaſe of the kidneys cauſed the pain of the head by ſympathy; adding, at the ſame time, that he would reſtore the patient to health.

What he adminiſtered I know not: our prognoſtic, however, was confirmed by the fatal event of the day: but the impeachment of our judgment demanded anatomical inveſtigation, and this was liberally permitted us by the family; ſome of whoſe friends, and ſeveral reſpectable profeſſional men, attended, as well as Dr. Saunders and myſelf; and the following is the relation of Mr. Ware, who performed the diſſection.

"On opening the body of Mr. H. on the "7th of February, 1789, the following ap-"pearances were obſerved:

" In the abdomen, the ſtomach and in-
" teſtines appeared ſlightly inflamed; and
" the inteſtines were much diſtended with
" air. The liver, ſpleen, and kidneys, were
" perfectly ſound.

" In the thorax, the right lobe of the
" lungs intimately adhered to the pleura.
" The left lobe likewiſe adhered, but the
" adheſion was leſs extenſive.

" In the head, the dura mater appeared
" inflamed; and in the duplicature of its
" falciform proceſs, nearly midway between
" the os frontis and occiput, and almoſt as
" low as the corpus calloſum, two hard
" bony ſubſtances were found enveloped.
" The largeſt of theſe, which was about the
" ſize of the nail of the little finger, was
" flattened and irregular in ſhape, and had
" ſharp ſerrated or jagged edges; its weight
" when dry was four grains. One of its
" ſides was nearly ſmooth, having only one
" or two ſmall furrows in it, ſimilar to thoſe
" which are made by the preſſure of the
" veſſels of the dura mater on the inſide of
" the cranium. Its other ſide was rough
" and uneven, and a little marked with

" blood.

" blood. The ſmalleſt of the bony ſub-
" ſtances was long and ſlender, reſembling
" a portion of a fine needle, and having its
" extremities terminated in ſharp points.
" In the ventricles the quantity of water
" was greater than is uſually found.
" The other parts of the brain were un-
" diſeaſed.

" The appearance of the bony ſubſtances
" abovementioned did not anſwer to the
" idea uſually entertained of a morbid oſſi-
" fication of a ſoft part; but they rather re-
" ſembled portions of the cranium forced by
" accident from their natural poſition. It
" is not eaſy to explain the manner in which
" theſe bones could make their way from
" the cranium to the part in which they
" were found; nor on examining the cra-
" nium, which was done with the greateſt
" care, could the ſmalleſt mark of injury be
" perceived *."

In original depoſitions of bony matter, or ſoft membranes, the ſubſtance is uſually of a

* The accident which happened to the deputy at an early period of his life, was unknown when this hiſtory and the ſubſequent remarks were firſt drawn up for the inſpection of the ſurviving family.

loofe friable texture; the bones found in the prefent inftance were as hard as the furface of the tibia; in fhape not very diffimilar to a gun flint with jagged edges.

The interior furface of the cranium was fmooth, and the perioftium in a found ftate; and, confidering the hard texture of the bony fragments, it was difficult to account for their admiffion within the cranium, till an explanation was afforded by the family of the deceafed.

From the injudicious infinuation of the empiric, who was ultimately employed, I was more defirous of relating the cafe with impartial punctuality, and after a fketch was drawn up, it was conveyed to the family for their concurrence, in which the difficulty above mentioned was ftated. With their confirmation of the facts I was then informed, and not before, that about twenty years ago the patient had had a violent fall off horfeback, which it was then fuppofed had fractured the fkull, and it was fome months before he was reftored to health, without undergoing any operation on the cranium. Hence may it not be fuggefted that thefe hard pieces of bone had been fractured

tured from the internal lamina of the cranium at the period of this diſtant accident?

The ſlight inflammation of the inteſtines and ſtomach, might ariſe from frequent vomiting and long inanition, the inflammation and adheſion of the lungs and pleura appeared to be chronic affections, as he had long been troubled with a cough, and during the laſt illneſs it was leſs violent than uſual, though more noticed from the concomitant head-ach and ſickneſs.

I conceive, therefore, that the immediate cauſe of death was in the head. In adults the ventricles of the brain never greatly dilate, and, for the period of the patient's age, the quantity of water in them was conſiderable. Probably, however, the irritation from the preternatural bony ſubſtances gave riſe to inflammation, and the conſequent collection of water in the ventricles.

From the frequency and fatality of accidents of the head, occaſions have been afforded of communicating the reſult of ample experience; but I do not recollect any caſe that exactly correſponds with the preceding. In general, acute inflammation has ſucceeded accidents affecting parts within the

cranium, which have either required ſurgical operation, or ended fatally; though ſome exceptions indeed are recorded.

Moſt accidents any way reſembling the preſent caſe, may be arranged under the following heads, to which I have annexed references moſt correſpondent to each, that the reader may be acquainted with the authorities I have conſulted.

DISEASES WITHIN THE CRANIUM.

I. From accidents or blows on the head, ſeparating bony fragments off the internal or external lamina of the cranium, and inducing acute inflammation of the brain.

Hippocrat. de cap. vuln. cap. x. Chart. T. xii. p. 119.

Johannes de Vigo in Practica, lib. iii.

Jacobus Berengarius de fractura Calvariæ.

Ambroſe Parè, Maniere de traiter les playes, &c.

Nicolaus Tulpius in obſervationibus, &c.

Conrad. Victor Schneider de oſſe occipitis ejuſdem vitiis et vulneribus 1653.

John

John Schultetus, in armamentario, &c. ob. xvii. p. 214.

Petrus de Marchettis in Obſervation. &c.

J. Jacob Wepfer de locis affectis, &c.

Henr. Franc. le Dran, Obſervations de Chirurgie, &c. And Traitè des Operations.

J. Wilh. Albrecht, in Comm. Nor. 1735. p. 41.

H. Ravaton en Chirurgie Armeè, &c.

Morgagni de Cauſ. et Sed. Morb. lib. iv. let. 41. art. 30, 34.

II. From ſimilar cauſes, where the bony fragments have remained for a conſiderable time, producing chronic inflammation or ſuppuration.

Heliodorus de Capitis vulneribus.

Lanfrancus in Practica, &c. Tract. ii. cap. 1. de cura percuſſionis capitis.

Lud. Franc. Manne, Obſervations de Chirurgie au ſujet d'une playe a la tete, &c. 1729.

Joſeph Warner, Eſq. Caſes of Surgery.

Boneti Sepulchr. Anatom. tom. 1. l. i. § 1. ob. 105.

III. From

III. From bony ſubſtances within the cranium proving fatal, but unſuſpected, and diſcovered only by diſſection after death.

Cattierus Obſ. Med. xv.

Borellus, Cent. 4. Obſ. xcix.

Boneti Sepulchr. Anat. t. 1. l. i. §. 1. obſ. 108.

IV. From bony ſubſtances lodged within the cranium, not proving fatal; but diſcovered by diſſection, after the death of the patient by ſome other diſeaſe.

Boneti Sepulchr. Anatom. tom. 1, lib. i. ſect. i. obſ. 106, 107, 108, 113.

Barthol. in Anatom. Reform. l. iii. c. 2.

J. Rhodius, cent. i. obſ. 32.

Neander in Tobaccalogia.

Lieutaud, Hiſt. Anat. Med. p. 160. obſ. 65.

V. From bony or ſtony concretions, ſpontaneouſly formed, and from various oſſifications within the cranium, and extraneous ſubſtances lodged in the brain.

Tho.

Tho. Bartholinus, Hist. Anat. cent. iii. iv.

Act. Haffniens, vol. ii. obs. 132.

Cummenus, Miscel. cur. anni 3. obs. 329.

Fabricius Hildanus, cent. i. obs. ii. et cent. v. obs. 1. ex Kentmanno.

Hollerius, lib. i. cap. 48. in Scholio.

Halleri Phys. in variis locis. tom. iv. v.

Lieutaud, Hist. Anat. Med. obs. 552, 553, 554, 555.

ARTICLE VI.

A Case of an extraordinary irritable Sympathetic Tumor.

By C. BISSET, M. D. and F. M. S.

Read December 19, 1788.

On the 27th of September, 1785, Jane Wood, the wife of a day-labourer in Newby-wiſk, aged twenty-nine, of a middle ſtature, rather thin, florid, and very healthy, deſired my advice for a very uncommon local diſeaſe, which made her very unhappy, though it was free from danger, and did not in any wiſe impair her health: it originated from a ſmall, ſmooth, and ſomewhat hard tumor, of the colour of the ſkin, of an irregular oval form, and about the ſize of a filbert, on the out-ſide of her left leg, ſix inches above the malleolus externus, and about half an inch from the anterior ridge of the tibia, to which its long diameter was nearly parallel: it was ſcarcely moveable, as it ſeemed to adhere to the tibialis anticus, or to its aponeuroſis. She

She had been married ſeven years, had three children, and was then pregnant with the fourth. She gave the following account of the little tumor:

It began ſixteen years ago by a ſmall pimple of the colour of the ſkin, which was preceded by itching in that part: yet the pimple was not at any time affected with itching, or any degree of pain or inflammation: but the party uſually had ſome little uneaſineſs in and about it immediately before a great fall of rain or ſnow, and in very windy weather.

What is extraordinary in this caſe is, that in a ſhort time after this young wife had firſt conceived, the aboveſaid pimple increaſed to the ſize of a large filbert, and became in the higheſt degree irritable; and the party began to be affected with a violent periodical pain in it, which made its onſet daily, and recurred twice or three times, and ſometimes oftener, in twenty-four hours, at unequal and uncertain intervals; the duration of each paroxyſm often varying a little, and never exceeding one hour.

The excruciating periodical pain was not preceded by any rigor or chillineſs, and for ſeveral

ſeveral minutes it was intolerable; after that it decreaſed gradually till it quite ceaſed. The party ſaid that the pain, when moſt vehement, reſembled that which ſhe ſuppoſed would be excited by darting a ſharp-pointed knife repeatedly into the tumor.

The pain was not always confined to that part, for being doubtleſs ſpaſmodic, it darted, when moſt violent, to the origin of the tibialis anticus, and from thence often upward to the ſpine of the ilium; and from thence it deſcended ſometimes into the left ſide of the hypogaſtrium; and ſometimes, but ſeldom, it darted upward to the ſtomach: nay, ſo great was the irritability of this little, and, to appearance, frivolous, tumor during pregnancy, that, on being ſomewhat rudely touched with a finger, or with the ſkirts of her petticoat, the ſpaſmodic pain was inſtantly excited; but ſuch accidental paroxyſms were always of ſhort duration.

As ſoon as the patient was delivered of her firſt child, the little tumor became at once exempt from any uncommon irritability; and the periodical paroxyſms of acute pain quite

quite ceafed: and in this ftate it continued during the fpace of thirteen months; except that fome little uneafinefs was perceptible in it before the falling of much rain or fnow. In the end of that period, the party having again conceived, the tumor acquired its former irritability, and fhe was affected precifely in the fame manner as fhe had been during her firft pregnancy: and as fhe now entertained no hope of relief during her fecond pregnancy, without medical aid, fhe applied to Mr. Whitehead, an eminent furgeon in Thirfk; who, after adminiftering the bark without effect, made a crucial incifion into the little tumor, with a view of promoting a fuppuration, and deftroying its irritability: but as this refource alfo failed of fuccefs, he had recourfe to excifion, which proved effectual, and happily freed the party from that excruciating fympathetic affection; and the cicatrix, after the wound was healed, was exempt from any uncommon degree of irritability; and fo continued till fhe conceived the third time, which happened in fourteen months after fhe was delivered of her fecond child.

It

It was remarkable that, almoſt immediately after her third conception, the little tumor was reproduced, but did not increaſe quite to its former ſize; and the paroxyſms of exceſſive pain commenced and returned two or three times daily, as they had formerly done during a ſtate of pregnancy; and the tumor was as irritable as it had been in either of the two former periods of geſtation. Yet, as the former cure was but temporary, and being, perhaps, afraid of cutting, ſhe bore the excruciating periodical local diſeaſe with great fortitude till ſhe was delivered of her third child, when the tumor became at once perfectly indolent as it had formerly done.

In June, 1785, the patient having again conceived, the irritability of the little tumor commenced as uſual, and the periodical ſpaſmodic pain, ſhe ſaid, was more violent than it had been at any former period; and ſhe now often diſturbed the neighbours with loud crying, from intolerable pain under each paroxyſm. Her patience being at length exhauſted, ſhe came to Knayton, towards the end of September following, imploring

my

my advice. I directed the application of the cauſt. commune fort. which being bruiſed and well moiſtened with water, and applied upon the tumor on lint that was alſo moiſtened, produced its effect, with the aid of compreſſion, in twenty minutes. The pain, chiefly from the compreſſion of the very irritable tumor, was in the higheſt degree excruciating during fifteen minutes; after that it began to abate, and in a few minutes more quite ceaſed.

After the ſeparation of the eſchar ſome ſmall remains of the tumor were deſtroyed by touching with the cauſtic; together with a ſmall portion of the aponeuroſis, where the bottom of the tumor ſeemed to be blended with it. She called on me again in the forepart of December following, and ſhewed me the cicatrix, which was perfectly free from any uncommon degree of irritability. She was then pregnant with twins, a boy and a girl, who are now living, and very fine healthy children.

In October, 1787, being informed that Jane Wood was again pregnant, I ſent for her, being deſirous to know whether the

cure effected by the caustic had proved radical; and I rejoiced to find that it had so proved; that the tumor had not been reproduced on her last conception, and that the cicatrix had remained totally free from any uncommon degree of irritability ever since the tumor had been wholly eradicated by the caustic.

ARTICLE VII.

Caſe of violent Pains in the Penis, and neighbouring Parts.

By JAMES BUREAU, Surgeon, and F.M.S.

Read December 15, 1788.

A Gentleman of about thirty years of age, of a ſtout robuſt make, and apparently of a healthy conſtitution, applied to me in October, 1787, on account of a violent pain in his penis, particularly round the corona glandis, but which extended to the bulb of the urethra, up to the inguina, frequently acroſs the pubes, and often affected the teſtes.

He told me, that having had a connexion with a woman of ſuſpicious character a few nights before he applied to me, he was the very next morning attacked with the ſymptoms above deſcribed.

 I found

I found he had no gonorrhœal difcharge, or ardor urinæ; nor had he any priapifm.

I hardly fuppofed that fuch violent fymptoms, coming on fo fuddenly and quickly after a connexion, could be the effect of venereal virus, as that generally takes a much longer time before it fhews the peculiar fymptoms attending it.

He had no fever, nor had he any other pains in other parts of the body, nor were thefe pains unremitting; they would frequently go off, and as frequently return, feveral times in a day.

I firft ordered him a bolus with extr. thebaic gr. ii. and camph. gr. v. to be taken at bed-time, and a purging draught the next morning, advifing alfo an immerfion of the penis in warm water. As he flept during the night he felt no pain, but in the morning, and through the next day, the pains returned as ufual. I now ordered him to repeat the fame bolus every time the pains returned; I alfo advifed a bladder of hot water to be applied to the perinæum, his fcrotum and penis to be fomented with an anodyne fotus, and a cataplafm, made with the farina

lini

lini and a ſolution of opium in hot water, to be applied round the penis.

This plan was continued twice a day for ſeveral days, with little or no abatement of the ſymptoms; excepting that the frequent and large opiates made him ſo faint and weak that ſometimes he could ſcarcely ſtand; and then the pain was not ſo violent: on this account, and finding that opiates did not relieve him, I diſcontinued them.

Upon proper examination, I did not find reaſon to ſuppoſe that there was any diſeaſe of the proſtate gland, and upon paſſing a pretty large bougie, did not find the leaſt ſtricture in the urethra.

I next thought I would try what the loſs of ſome blood from the part by leeches would effect; I accordingly directed ſeveral to be applied round the corona glandis, and all along the urethra as far back as the perinæum; the orifices bled very plentifully for ſeveral hours, but the pain was not relieved. The following day I took twenty ounces of blood from the arm, which cauſed fainting; the blood was not at all ſizy, and in a few hours, when the patient was thoroughly re-

covered, the pains returned, but not quite ſo violent as before.

I next propoſed a courſe of bougies, with intent to produce a urethral diſcharge, which I thought a very probable means of relieving the pain, as what had been before tried proved ineffectual: this plan was entered upon and continued ſome weeks; the diſcharge it produced was very trifling, and no benefit was received: this alſo failing, I was determined to put him upon a full mercurial courſe, and ſee what that would do: I accordingly recommended him to go to the warm bath, and uſe mercurial frictions with the ung. cœrul. fortius every night, beginning at the ancles and going upwards till he reached the inguina; I alſo ordered him a ſolution of the ung. cœrul. fort. in ol. olivar, with opium as an injection, and a cataplaſm with the farina lini and ung. cœrul. fort. to be wrapped round the penis. This plan was continued till a copious ptialiſm was produced, and his face very much ſwelled; during the continuance of the ſpitting the pains were very much abated, and he had long intervals (ſome days) of perfect freedom

from

from pain; but in proportion as the ſpitting diminiſhed the pains returned as formerly, and when the effects of the mercury were entirely gone off, the pains in every part returned with their former violence.

The diſorder not yielding to this full courſe of mercury, ſatisfied me that my original idea of its not being venereal was well founded. I did not however put him upon a mercurial courſe from a ſuſpicion of venereal infection, but from its well-known efficacy in removing the moſt obſtinate deep-ſeated pains from other cauſes; but whatever good effect it may have, and often certainly has, in ſome painful diſeaſes, in this it was not attended with that ſucceſs.

My patient, as well as myſelf, was by this time quite tired of the buſineſs, having gone through ſo much with little or no apparent relief. Several weeks elapſed without my ſeeing him (as he choſe to call upon me, rather than me upon him), and I concluded that he had either given it up as a hopeleſs caſe, or that he had applied to ſome other ſurgeon. At length, however, he paid me a viſit, and told me that, not having found relief from my preſcriptions, he had applied

to an eminent practitioner at the weſt end of the town, but was ſorry to ſay that he had not found the leaſt benefit, and apologized for applying to any one elſe without acquainting me firſt.

He told me he had been with women ſeveral times ſince he ſaw me laſt, and was ſurpriſed to find that he never had the leaſt pain during any connexion. Conſidering the powerful antiſpaſmodic and antiphlogiſtic courſe he had been ſuch a long time purſuing, and its total inefficacy, it was plain the diſorder could not ariſe from any ſtimulus that had the leaſt inflammatory tendency; and that therefore it might probably be produced from an oppoſite ſtate of the nerves; as happens in old chronic rheumatiſms, attended with coldneſs of the parts and violent pain, and ſuch as are frequently relieved both by topical and internal ſtimuli; and, in favour of this idea, the circumſtance of his having no pain at all upon an erection was a powerful argument.

I thought, however, I would try the effect of another antiſpaſmodic before I ordered ſtimulants, and this was the extractum cicutæ. I directed the plain extract to be

 made

made up in middling ſized pills, to take one or two every two or three hours in the day, according as he found his ſtomach or his head could bear them; in this way he took ſome ounces of the extract, which often made him very giddy, but had no effect in removing the pain.

I was now determined to alter my plan; but, before I ventured on abſolute ſtimulants, I was reſolved to try what the bark would do. I therefore directed him to take from an ounce to an ounce and an half of the beſt Jeſuit's bark in powder (which he got from the Apothecaries hall) in the courſe of the day, and to continue it every day; which he did for, I think, about a fortnight; but this, like all the other remedies, proved inefficacious.

I now thought I ſhould be vindicated in uſing more ſtimulating medicines; and recommended the tinct. guaiac. volat. ʒii. four times a day. This was continued ſome days without any good effect; and I then joined with it ſome of the balſ. traumat. but as unſucceſsfully as before: beſides the above, I ordered him to apply æther round the body of the penis, firſt dropping it in the palm of his

his hand, and holding it on as long as he could bear; this alſo proved uſeleſs.

The next ſtimulant that I tried was a bliſter round the penis, which reached from the pubes to the prepuce; this cauſed great ſoreneſs, but did not remove the pain. I muſt own I had great expectations from the bliſter, but that failing, I thought probably electricity might at laſt prove his cure: I therefore put him upon a courſe of electricity for about a fortnight, taking ſparks from all the parts, and gentle ſhocks through from the lumbar vertebræ and ſacrum: but the pains mocked the powers of the electrical fluid as much as they did every other means that had been tried.

I now told my patient that I was much afraid he muſt not expect a cure from medicine; but that I thought it probable that a virulent gonorrhœa might cure him, as the inflammation and ſpecific action attending that diſeaſe might prove a very different ſtimulus from any that I had made uſe of; and, as two different actions cannot take place at one and the ſame time, I conjectured that the venereal action might ſuperſede, as it were, that diſpoſition which was the cauſe

of

of the particular pain he had. I did not, however, adviſe him to get injured for experiment ſake; but only threw out my ideas as merely hypothetical.

I was very deſirous of having a conſultation with one of the moſt eminent ſurgeons in London, and my patient wiſhed to ſee Mr. John Hunter; that gentleman accordingly met us, and having given him the whole detail of the caſe, he declared it as his opinion that the complaint was incurable; and thoroughly agreed with me, that it *was not*, nor ever had been, venereal. Mr. Hunter ſaid that he had lately been conſulted for a ſimilar malady in a gentleman, who had been afflicted with it, I think he ſaid, for three years; and who had conſulted many very eminent medical people without any benefit; and that he told that gentleman, as he did my patient, that he looked upon it to be incurable by medical aid; that he conſidered it as one of thoſe diſorders which a man muſt make up his mind about, and bear with patience, as we muſt many other evils in life; being ſatisfied that it had no dangerous tendency, and that perhaps by habit he would at length diſregard

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it, or that, in procefs of time, it might poffibly wear off: obferving alfo, that in this, as in fome nervous affections, the conftant anxiety of mind, and continually thinking upon the complaint, and fretting, were very likely means of rendering the malady more inveterate. This was but poor confolation to the afflicted: Mr. Hunter, however, recommended him to take very large dofes of the powder of valerian to an ounce in the day. This the patient complied with for feveral days, but found no benefit at all from it. In this ftate I gave up my patient to time and patience, not having any thing elfe to recommend.

Several months elapfed before I faw him again; when he called upon me, I inftantly afked him how his complaint was; and he told me that he had had it upon him, better and worfe, ever fince he faw me laft, till within a few days, when he found he had contracted a virulent gonorrhœa, attended with confiderable ardor urinæ, priapifm, and a very copious difcharge; fince which he had not experienced the *leaft return* of his former complaint. This circumftance afforded me, as well as him, great pleafure,

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more particularly, as it proved that my former conjecture was not ill founded. I treated him for this diſorder in the uſual way; but avoided injections, determined that the diſcharge ſhould have no check, but take its courſe. In due time all the painful ſymptoms attending the gonorrhœa went off, though the diſcharge continued very copiouſly, but appeared more of the nature of gleet; at this time, however, he had ſome ſlight return of pain about the penis, but very little about the inguina, and none at all in the teſtes; and in this ſtate he has now continued ſome time; and I do not think it unlikely, but that as the complaint has begun to give way, in courſe of time he may get perfectly well.

I muſt now apologize for taking up ſo much of the Society's valuable time, by this account of a diſorder that has baffled every medicinal effort to relieve it; but I am happy to obſerve that what medicine could not effect, the virulence of another painful diſorder ſupervening entirely accompliſhed, for a conſiderable time, during the inflammatory ſtage of that diſorder. But, as it is not every one that would chooſe to con-

tract

tract one bad diſorder for a chance only of getting rid of another, I hope the learned and ingenious, knowing by the above narrative what means have failed of ſucceſs, may be fortunate enough to diſcover ſome other mode of treatment that may inſure a cure with more ſafety, and certainly with much more ſatisfaction, than that of contracting a virulent gonorrhœa.

ARTICLE VIII.

On the Effects of Compreſſion of the Arteries in various Diſeaſes, and particularly in thoſe of the Head; with Hints towards a new Mode of treating Nervous Diſorders:

By CALEB HILLIER PARRY, M.D. C.M.S. (Bath.)

Read January 19, 1789.

Between two and three years ago I was engaged in an aſſiduous attendance on a young lady of a thin habit and pale complexion, who, from ſudden and violent agitation of ſpirits, had been in an inſtant ſeized with a great variety of thoſe complaints which are called nervous. The ſymptoms were of the following kind: palpitation of the heart, head-ach, coldneſs of the feet, occaſional ſhivering, alternating with extreme heat, particularly about the face and head, together with convulſive contractions of

of the ſterno-maſtoidæi and recti abdominis muſcles; in conſequence of which the head and body were bent forward with a force which could not be overcome by the ſtongeſt efforts of the will, and not without great difficulty by the united preſſure of two or three aſſiſtants on the thorax and abdomen. Each convulſive contraction was immediately followed by a relaxation of the muſcles, and produced a violent and ſonorous expiration, like an extremely loud hiccup; though I could not perceive that the diaphragm was on theſe occaſions at all affected. Sometimes, inſtead of theſe ſymptoms, ſhe was ſeized with a difficulty of breathing, which evidently aroſe from the larynx being drawn violently upwards and retained in that ſituation; the muſcles about the pharynx, glottis, and forepart of the throat, being all the time rigidly contracted, and reſpiration ſo impeded, that for ſeveral hours ſhe was not able to take one perfect breath. Both the convulſive emproſthotonos and this orthopnoea varied as to their duration, often continuing ſeveral hours, and never exiſting together, but the former generally increaſing,

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if not removed by opiates, till it was ſucceeded by the latter.

Both were alſo frequently interrupted by a ſtate which the attendants called fainting, but which was very different from the true ſyncope cardiaca. The power of voluntary motion, as well as the ſpaſms and convulſions which I have deſcribed, very ſuddenly ceaſed; and all the ſenſes, except ſometimes that of hearing, were alſo ſuſpended. But no coldneſs came on the extremities, the face retained its colour, and the motion of the heart was not perceptibly changed.

This ſort of ſtupor was of various duration, from a few minutes to an hour and a half. Sometimes, during this ſtate, there was a degree of triſmus, in which the temporal and maſſeter muſcles were contracted, and the lower jaw firmly fixed, or the teeth ſtrongly grated together. Now and then there was a tendency to an interruption of the ſtupor by ſlight returns of the convulſions about the throat and abdomen; but theſe would frequently go off without proceeding ſo far as to rouſe her. After ſome time, however, they would by degrees increaſe ſo as at length to bring her to herſelf, when ſhe would ſud-

denly ſtart up with the emproſthotonos or orthopnoea before deſcribed.

The paroxyſms of the emproſthotonos were extremely apt to be excited by the moſt trifling cauſes; as any ſudden impreſſion on the ſenſes, though of the ſlighteſt kind, ſuch as the falling of a pill box, or even a large black pin on the floor; various mental irritations; and any unexpected motion or conſiderable exertion of the body, more particularly the erect poſture, and all attempts to ſupport the body on the feet, or to draw the knees forwards and upwards.

The orthopnoea was conſtantly capable of being excited, and, when preſent, of being extremely aggravated, by the ſame cauſes when acting with violence; and by various ſmells, as thoſe of æther, volatile alkali, ardent ſpirits, many eſſential oils, ſnuff, pepper-mint, ſouthernwood, wormwood, valerian, aſafœtida, and all ſmokes. It was alſo much increaſed by every effort to ſwallow, and by all ſtimulants taken internally.

From the great facility with which the emproſthotonos was induced, there was ſcarcely a day during which it did not frequently occur; but it was almoſt conſtantly and ſpeedily

ſpeedily removed by laudanum, much diluted with water. Sometimes, however, it appeared without any external cauſe of excitement. This was alſo the caſe with regard to the orthopnoea; and the attacks of both commenced, for the moſt part, about eight o'clock in the evening. The latter ſymptom ſeemed to admit of little relief from medicine, but, after having been frequently interrupted by the ſtupor, gradually declined till about four or five in the morning, when it generally diſappeared, leaving the patient extremely fatigued, and much diſpoſed to the ſtupor, but not at all to ſleep.

I have before remarked that the ſenſe of hearing was not always perfectly ſuſpended during this ſtupor. Thus, when the latter was ſlight, ſhe could hear the common converſation which paſſed around her, and a conſiderable noiſe would at any time make her ſtart up in a ſtate either of emproſthotonos or orthopnoea.

After ſhe had remained in this ſtate ſome months, a paroxyſm of convulſions, more than uſually violent, on a ſudden ceaſed, and was inſtantly followed by delirium, which continued to recur, at intervals, during many

 ſucceeding

ſucceeding months: the tendency to this ſtate was generally evident from certain feelings of pain or heat about the head, and an unuſual ſenſibility with regard to light and ſound. When it came on ſhe was ſometimes, for a conſiderable time, ſilent, ſometimes violent, ſometimes penſive, and at other times extremely cheerful. The ſtate of violence aroſe from an apprehenſion of danger from thoſe about her; but ſhe never attempted any ſerious miſchief againſt herſelf or others. The temper of mind during the fit of delirium was often connected with the cauſe which excited it. Frequently, however, the delirium interrupted the train of thought immediately preceding; and when it ſubſided, ſhe had never any recollection o any thing which had paſſed during the paroxyſm, though it was always accompanied with that ſort of conſiſtency, both of reaſoning and conduct, which ſeemed particularly well calculated to attain the end propoſed. The firſt attack laſted ſeveral days; but few ſubſequent ones continued many hours; and, as the complaints declined, the duration of the fit was often only a few minutes. Paroxyſms were apt to be excited by many of the cauſes of irritation

irritation which I have before mentioned, when they acted with extreme violence. They alſo frequently ſucceeded both the orthopnoea and emproſthotonos, when either was in a very great degree; and the patient often ſuddenly awoke into a fit of delirium from a ſtate of profound ſtupor.

The delirium never ſubſiſted with any of the convulſive complaints, except both were in a very ſlight degree; but they frequently alternated with each other and with the ſtupor; and I ſcarcely remember an inſtance in which the delirium went off without being ſucceeded by violent convulſions. The attendants were indeed always ſenſible when it was receding by ſome ſlight appearance of the convulſive twitchings about the throat or abdomen.

During this ſtate ſhe had regular returns of the catamenia in a quantity rather more profuſe than uſual. Her appetite was good; her bowels habitually bound, except when opened by medicine; her urine often in large quantity, particularly during the convulſive attacks; and the pulſe was ſomewhat quicker and fuller than in health, although ſtill far from what could be called a

full pulſe. The period of ſleep ſeldom amounted to two hours in the twenty-four; and the little which ſhe obtained was towards the morning, and diſturbed both by uneaſy dreams and frequent ſtartings.

The many months which theſe complaints continued afforded me an opportunity of fairly trying all the meaſures which experience had pointed out for the relief of diſorders denominated nervous. Almoſt all of them, however, were at leaſt inefficacious, if not injurious: of the latter claſs, as I have before remarked, were thoſe of the ſtimulating kind, as fœtids, aromatics, volatiles, ardent ſpirits of ether. In one word, upwards of a year conſumed in the trial of remedies, which procured not even the ſmalleſt temporary relief, exhauſted my patience, and only ſerved to eſtabliſh in my mind a conviction how little was known on the ſubject of nervous diſeaſes. The origin of the complaint was evidently too great a ſenſibility of the nervous ſyſtem; but what the ſource of that undue ſenſibility was I often reflected in vain. If it depended on a morbid conſtitution of the medullary ſubſtance of the brain, there could be little hope of

changing

changing that ſtate; nor was I acquainted with any indications which comprehended the meaſures neceſſary to change it. All the ſorts of medicines called tonics, ſuch as bark and ſteel, together with the bitters and aſtringents, as caſcarilla, quaſſia, colombo, gentian, centaury, wormwood, camomile, kino, alum, &c. I had before tried, and from all, but the two laſt, had found a manifeſt aggravation of the ſymptoms.

Reflections like theſe were conſtantly recurring to my mind till an obſervation of the order of the ſymptoms, by degrees, furniſhed me with the concluſions which I had ſo long ſought in vain.

I had remarked that the fits of delirium were preceded by a ſenſe of fulneſs and throbbing pain in the head (what the common people in this country call opening and ſhutting), accompanied with a great degree of heat and fluſhing about the head and neck, and a ſenſe of burſting in the throat and upper part of the thorax. Theſe ſymptoms appeared to me evident marks of too great a quantity of blood forced through the carotid arteries into the brain, and to the outſide of the head. It followed that if the cauſe

were removed the effect would ceafe. Under the pretence therefore of feeling the pulfe in the neck, I took the opportunity of the firft attack of delirium, when the brow was contracted into an immovable frown, to prefs ftrongly with my thumb on the right carotid artery a little below the larynx. I do not remember having experienced a philofophical pleafure in any degree comparable to that which this experiment afforded me. No fooner was the preffure made than the aufterity of the countenance difappeared, and the patient was reftored to the perfect ufe of her fenfes and powers of reafoning. At the fame time the headach, and the undue fenfibility with regard to light and found, which had always taken place in the intervals of the paroxyfms, were altogether wanting, and the patient declared that in every refpect fhe was free from complaint. After having fully fatisfied myfelf as to the effect of this preffure, I gradually removed my hand. The frown in an inftant returned on the countenance, and every mark of delirium immediately fucceeded. In the courfe of many fubfequent months I was able to repeat this experiment fome hundreds of times, and to exhibit

exhibit it to the attendants with the utmoſt certainty of ſucceſs.

I was now perſuaded that the cauſe of the morbid ſenſibility, ſo far as reſpected the delirium, conſiſted in too violent a determination of blood to the brain; and as the emproſthotonos and orthopnoea ſo conſtantly alternated with the delirium, it might be ſuppoſed that I ſhould naturally have concluded them alſo to be different degrees of the ſame morbid affection of the brain. But no ſuch reflection preſented itſelf to my mind.

It has been before remarked that my patient had frequent fits of ſtupor, from which ſhe would often ſtart up in a ſtate either of delirium or convulſions; and that the more violent convulſive contractions, which were ſufficient to rouſe her, were often preceded by ſlighter ones about the throat and abdomen, which did not entirely interrupt the ſtupor. It appeared to me worth while to try whether compreſſion of the carotid artery, before the inſtant of her waking, might not prevent the delirium which often followed. The event conſtantly anſwered my expectations. During one experiment of this kind,

 which

which happened to be made while there was ſome appearance of the ſlight convulſions which I have juſt mentioned, I thought I obſerved that they ceaſed while I compreſſed the artery, and returned as ſoon as the preſſure was removed. In a few minutes an opportunity was afforded me of proſecuting the experiment after the ſtupor had ceaſed; and I found that this preſſure as certainly ſtopped the difficulty of breathing and convulſions as it had before removed the head-ach and delirium.

The ſame effect was produced by the ſame operation with regard to the locked jaw, or contraction of the temporal and maſſeter muſcles, which ſometimes, though rarely, occurred during the ſtupor.

Beſides the complaints which I have deſcribed, my patient had been for ſeveral years liable, particularly about the periods of menſtruation, to a true ſpaſmodic hiccup, or contraction of the diaphragm, which much exceeded in violence any diſorder of the ſame kind which I had before ſeen. This hiccup yielded, like the other complaints, to the compreſſion of the carotid artery.

Since

Since the period of this diſcovery, which is now more than a year and a half, I have made the experiment, in a great variety of inſtances, with the following ſucceſs. It nearly or totally removes the hemicrania of the ſide on which the compreſſion is made; the headach which is called nervous; that alſo which is inſtituted bilious, and which evidently ariſes from a diſorder in the alimentary canal; vertigo; noiſes in the head; the ſenſe of heat in the ſame part, and the mental agitation of nervous patients. In one patient, who was affected with a violent inflammatory fever, it immediately removed the headach and tendency to delirium. It produced no ſenſible effect in another who was delirious in a typhus, and afterwards died. It quieted the ſymptoms in two caſes of chronic mania, which had ſubſiſted ſeveral weeks; and in one example of the true phrenitis, which proved fatal in four days. It immediately removed the maniacal ſymptoms in the recent caſe of a young female patient, and the hyſteric convulſions in that of another who had been ſeveral days ill.

I have at this time a patient, of between thirty and forty years of age, of a florid complexion

plexion and full habit, who, in conſequence of an occupation which obliged him to ſit up late and riſe frequently in the night, was ſeized more than two years ago with epileptic fits, which he has ſcarcely ever eſcaped a ſingle day, and which have generally attacked him from thrice to eight or nine times in the twenty-four hours. They uſually take away his ſenſes for an inſtant, ſo that, unleſs ſupported, he falls down, but ſoon recovers himſelf. Sometimes, however, they have been known to continue half an hour. When they are of any length, they are accompanied with convulſive twitchings of the right arm and leg, and the right ſide of the face; and convulſions ſometimes occur in the latter, when the fits do not take away his ſenſes. I had long wiſhed in vain for an opportunity of ſeeing him in a fit. The paroxyſms were conſiderably abated as to frequency and force, when one afternoon, about the middle of September laſt, he called on me. He told me that he had that morning had five fits, in moſt or all of which he had loſt his ſenſes. While he was ſpeaking I obſerved an appearance about his face as though a paroxyſm was approaching. His

eyes

eyes began to assume a vacant stare, and convulsions were coming on about the throat. Under the usual pretence of feeling the pulse in the neck, I immediately made a strong compression of the right carotid artery. The convulsions ceased, and the fit proceeded no farther. He had one fit more that afternoon. I instructed him as to the nature and method of the operation, and he assures me that, when he has had sufficient warning, he has frequently been able to prevent the epileptic paroxysm.

I have very lately had an opportunity of trying compression of the carotid artery in two instances of what is commonly called the nervous rigor. In one case this rigor affected the jaws and whole body, and was the consequence of some of the first parturient pains in a lady lying-in of her seventh child. The second case is that of a lady, who, as I have reason to suspect, labours under a congestion, and, perhaps, a degree of inflammation in the psoas muscles of the right side, and some of the adjacent parts within the pelvis. The rigors which have occurred this afternoon, after a severe fit of pain, are such as she has been accustomed to suffer.

They

They affect principally the left ſide, and are neither accompanied with any coldneſs, nor ſucceeded by any preternatural heat. In both theſe examples they were almoſt inſtantaneouſly removed by the compreſſion in ſeveral different trials; and, for the moſt part, did not return till ſome time after it was diſcontinued.

As ſoon as I had found the means of removing the headach, delirium, and convulſions, in the female patient, whoſe caſe I have at large related, and from thence concluded that they were owing to an undue determination of blood to the brain, I was naturally led to inquire from what ſource this determination was derived. This I ſoon found to conſiſt in a palpitation of the heart, which invariably followed the remote cauſes which I have ſpecified, and as invariably preceded the delirium and convulſions. I have ſince extended my inquiries to a great variety of other caſes, and conclude, that too violent or too quick an action of the heart is the common cauſe of the nervous and bilious headachs, the nervous agitation of ſpirits, want of ſleep, uneaſy dreams, giddineſs, ſudden maniacal fits, hyſterics, epilepſy, and all kinds of convulſions.

convulſions. The epileptic patient whom I am now attending aſſures me that in every attack of his fits, in which he has time to make the obſervation, he finds them preceded by a palpitation of the heart; and this was certainly the caſe with regard to the paroxyſm of the approach of which I was a witneſs.

It may be neceſſary here to obviate ſome miſtakes into which perſons may be apt to fall on the ſubject of palpitation of the heart. Dr. Cullen has defined this diſeaſe, "Motus cordis vehemens, abnormis." The term abnormis, however, cannot always imply irregularity with regard to time, as ſhewn by the pulſe: for I have often known palpitation exiſt, while at the ſame time the pulſations of the radial artery have been perfectly regular. It often happens that each ſyſtole of the heart ſeems to be more vehement, and, as it were, bounding, than in the natural courſe of circulation. In ſuch caſes it is performed in a ſhorter time than uſual, and the interval between the beginnings of any one ſyſtole and that immediately following, is longer than uſual. As each interval may, however, have the ſame length, there

there will then often be little or no evidence of ſuch a palpitation in the pulſation of an artery ſo diſtant from the heart as that which we uſually examine. In the carotid arteries the caſe is widely different; for there we can always readily perceive the diſtinction between the violent and ſudden diſtention which ariſes from palpitation, and that more ſlow and undulating dilatation of the artery which accompanies the uſual healthy ſyſtole.

As during a ſtate of palpitation the heart contracts vehemently, and throws an unuſual quantity of blood to the head in a given time, it might be ſuppoſed that the impetus of the blood, in the arterial ſyſtem in general, would alſo be increaſed. Yet the contrary is often true in fact; for not only the branches of the aorta deſcendens are often robbed of their blood, and the lower limbs are therefore cold and ſhrunk, while the pulſation of the carotids are much too ſtrong, but even ſome of the branches of the aorta aſcendens itſelf are reduced to the ſame ſtate, and the hands are ſometimes cold, and the pulſe weak and ſmall. This is an extremely curious fact, of which I cannot here offer an explanation.

But

But while I am pointing out the effects of palpitation, I do not by any means affirm that the diseases, or symptoms which I have mentioned, always arise from an increased action of the heart. I am, however, persuaded that they almost * constantly depend on a stimulus of the brain, which is generally an accumulation or excessive momentum of blood in its vessels. Of this congestion, or increased impetus, an undue action of the heart, either in the way of palpitation or unusual velocity, though one, and certainly the most common, may not be the only cause. Many examples illustrating this point occur in the animal economy. That fulness of the uterine arteries which accompanies menstruation is not always preceded by any increased action of the heart; nor do many boils, sore throats, catarrhs, and other topical inflammatory diseases spring from any affection of that organ. We may hence easily perceive why compression of the carotid arteries should have

* Partial muscular spasms or convulsions often arise from increased determination of blood to the muscle affected; as in the croup, gouty cramp, &c.

little

little immediate effect in removing, though it actually alleviates the ſymptoms of inflammation of the brain and of chronic mania *: for thoſe diſorders may either be originally altogether topical, and ariſe from an affection of the arteries of the part, or, if they ſpring from an exceſſive action of the heart, may continue as local diſeaſes after that action has ceaſed. The common curable mania is an example of the latter kind, beginning, in every caſe which I have ſeen, with an unuſually quick or ſtrong motion of the heart, and often ſubſiſting as a topical affection of the brain after the pulſe is reduced to its natural ſtate.

The frequent experiments which I have made of the compreſſion of the carotid arteries have led me to a knowledge of various circumſtances relating to it, which I ſhall here mention.

I have ſeen it on one occaſion almoſt immediately bring on a ſound ſleep.

* It will not, perhaps, be expected that any means can remove or alleviate the ſymptoms of mania when it ariſes, either primarily or ultimately, from wrong organization, as in the caſes of exoſtoſes and indurations of the cerebrum or cerebellum.

In

In the patient on whom I firſt tried the preſſure, it frequently produced fits of the ſtupor, which I have above deſcribed, and lengthened thoſe which were already begun.

Its good effects, in the far greater number of examples in which I have made the experiment, ceaſe as ſoon as it has been removed: but then I have rarely continued it more than a minute or two. I have, however, ſeen ſome inſtances in which the nervous and bilious headachs have been for a conſiderable time, and even permanently, relieved. In my firſt patient a certain degree of compreſſion removed the delirious ſymptoms, and left the headach. A more complete preſſure removed the headach alſo. Sometimes, in the caſe of the ſame patient, it has happened that when the delirium has been thus taken away, it has not returned when the compreſſion has been withdrawn; but the headach has always remained, or either the ſtupor or convulſions immediately followed. I do not remember ever to have ſeen her freed from the convulſions any longer than while the preſſure was continued, except it brought on the ſtupor.

It ſometimes occaſions a kind of ſickneſs like that which accompanies the beginning of the ſyncope; and this is particularly the caſe after exceſſive determination to the brain has continued a conſiderable time. In examples of this kind, though the compreſſion may remove the peculiar ſymptoms of the diſeaſe, the patient is not reſtored to health and vigour, but reduced to the ſame ſtate of torpor as that which naturally ſucceeds ſuch diſorders when they ſpontaneouſly ceaſe.

It often produces a great degree of anxiety about the heart, eſpecially in plethoric perſons, or thoſe in whom the circulation has been by any cauſe previouſly quickened. The patient attempts to relieve this anxiety by unuſually deep inſpirations or ſighing. In ſome inſtances it ariſes to an almoſt intolerable degree, and ſeems exactly ſimilar to the oppreſſion of the heart which occurs in the angina pectoris. Theſe ſymptoms are evidently owing to an accumulation of blood in the arch of the aorta, and the left ventricle of the heart. The ſenſe of anxiety which I have deſcribed, is often followed by immediate palpitations of the heart.

In the caſe of one lady, who had long laboured under violent nervous headachs, and in whom the carotid arteries appeared extremely dilated and hard during each ſyſtole of the heart, the compreſſion of the right carotid immediately relieved the pain in the head, but brought on a violent pain in the courſe of the ſubclavian and brachial artery as far as to the elbow. It is ſcarcely neceſſary to mention that this effect was owing to the diverſion of the blood from the carotid to the ſubclavian artery.

It has been ſufficient on moſt occaſions to employ preſſure on one carotid, and I have generally choſen the right, as being moſt convenient for my right hand. But I have ſometimes applied the compreſſion to both carotids; and the effect has been proportionably conſpicuous.

To make a complete preſſure on the carotid artery is often attended with conſiderable difficulty. Some timid perſons, alarmed at the novelty of the operation, will not admit of its being performed effectually; and, if you inquire with regard to their feelings, before you have in reality performed it at all, immediately aſſert that they are much

worſe. In men the largeneſs of the muſcles and the thickneſs of the intervening integuments often much impede the operation, Compreſſion of both carotids at once is ſtill more difficult, becauſe the force applied on one ſide in ſome meaſure diſplaces the trachea, which is eaſily moveable, and cauſes it to cover the carotid on the other ſide. During a ſtate of convulſions too the ſterno-maſtoidœi muſcles, in almoſt all the inſtances which I have ſeen, are contracted in various ways, and the pharynx and larynx protruded, ſo that it is not eaſy either to reach the artery, or to diſtinguiſh when you have reached it. In women, however, who have generally longer and ſlenderer necks than men, one can often, without difficulty, produce a complete compreſſion of the artery againſt the vertebræ of the neck, ſo as entirely to obliterate its cavity; eſpecially if the patient be lying down, the chin raiſed, and the head bent ſomewhat backwards. The part where I have beſt ſucceeded is the common trunk of the external and internal carotid, a little below the larynx.

It is evident that the effect of the operation muſt very much depend on the ac-

curacy

curacy with which it is performed. For if the compreſſing ſurface be large, ſo as to comprehend the internal jugular vein, and more eſpecially if the preſſure on the artery be ſlight, and that on the vein ſtrong, no good, and even much harm may reſult from the operation. In the former caſe the quantity of blood accumulated in the brain is ſcarcely diminiſhed, in the latter caſe it is evidently increaſed.

Some of my Glouceſterſhire medical friends and myſelf have attempted to apply this operation in various other diſeaſes beſides thoſe which I have ſpecified. My ingenious friend Mr. Daniel Ludlow, jun. ſurgeon, of Sodbury *, furniſhes me with the following very curious experiment, which he made on his brother, who is alſo in the profeſſion of phyſic. The latter had been affected with a gouty inflammation in the foot, which had nearly ceaſed on the coming on of a pain in his head. Compreſſion of both temporal arteries immediately relieved the pain in the head; but it returned in an inſtant with violence to the foot. He then

* Now, (1790), of Bath.

compreſſed the popliteal artery, and the pain in the foot was in a moment diminiſhed.

I have found the pain accompanying inflammations in the jaws, ears, and eyes, in myſelf and others, greatly alleviated by preſſure on various branches of the carotid arteries. The pain of the wriſts, ariſing from a palpitation of the heart, was alſo, in the only inſtance in which I have made the experiment, removed by compreſſing the brachial artery.

It has naturally occurred to me to reflect how far the application of a tourniquet might be uſeful or ſafe in various diſeaſes which owe their origin to exceſſive arterial impetus. I have already thought of a conſtruction adapted to that purpoſe. The only danger to be apprehended from its long continued uſe near the heart, might be dilatations of that organ, and of the arch of the aorta, and perhaps even the beginning of an aneuryſm. Reaſoning a priori one might indeed at firſt ſight infer, that the ſubclavian arteries, and the other carotid, together with the aorta deſcendens itſelf, would readily carry off all the blood which ſhould be thrown out at each ſyſtole of the heart.

Yet

Yet experience ſhews the contrary; for, as I have before remarked, a total obliteration of the cavity of the right carotid artery almoſt conſtantly produces an oppreſſion about the heart and frequent ſighing, and in many inſtances violent palpitation; all evident marks of an accumulation of blood in the arch of the aorta and left ventricle. Yet in ſome particular caſes of diſeaſes of the head, depending on increaſed impetus of blood, whether primarily in the veſſels of the brain alone, or from an undue action of the heart, ſuch as phrenitis, violent epilepſy, ſanguineous apoplexy, and many caſes of hydrocephalus internus, it might probably be well worth while to employ a tourniquet on one or both of the carotid arteries by way of prevention or cure. For the diſorders which I have mentioned are certainly of the moſt dangerous tendency, while the accumulation of blood produced by the tourniquet might only be temporary, and lead to no organic diſeaſe of the heart or aorta. Leſs objection may probably ariſe againſt its uſe, where the compreſſion would be employed with regard to arteries, which are either ſmall or diſtant from the heart; as in the caſe of various in-

flammations in the limbs, derived from caufes acting mechanically, chemically, or medically; of this kind are burns, wounds, fractures, bruifes, and cutaneous, cellular, membraneous, articular, and glandular inflammations. How far removing fome of thefe diforders may always be fafe with refpect to the general conftitution, is another queftion. But fhould the means propofed be found effectual, it is evident that the compreffion may be regulated both as to duration and force, as the prudence of the attending phyfician or furgeon may direct.

It would be exceeding the due bounds of this paper, as well as anticipating what I mean hereafter to confider largely, were I to give a detail of a fyftem which this difcovery has fuggefted to me. If exceffive determinations of blood to the brain are cured by the appearance of various inflammatory diforders and congeftions in the vifcera, extremities, and on the fkin; by difcharges of different kinds, and by various depofitions out of the courfe of circulation, as even oedema itfelf; and if thefe diforders often alternate with each other, any one of them freeing the patient from all the reft; does it not follow

that they all equally ariſe from exceſſive determinations of blood to the parts reſpectively affected? This concluſion I think I can render in the higheſt degree probable from a great variety of evidences, deduced from the ſymptoms themſelves, from the conſtitutions which they affect, their prediſpoſing and exciting cauſes, ſpontaneous terminations, prevention and cure. This ſyſtem comprehends a moſt extenſive field, and endeavours to explain thoſe diſorders which have uſually been conſidered as the opprobria of phyſic.

The view which I have given of exceſſive determinations of blood to different parts, points out the mode of practice generally to be employed in ſuch caſes. It conſiſts in the uſe,

1ſt, Of thoſe means which diminiſh the undue action of the heart and arteries in general.

2dly, Thoſe which repreſs the exceſſive action of the arteries of the affected part: And,

3dly, Thoſe which excite or reſtore determinations to other parts of the arterial ſyſtem.

Under

Under the firſt head we may rank the avoiding of all general ſtimuli, whether external or internal; a low diet; general blood-letting; many evacuants, which will be mentioned under the third head; ſaline refrigerants; and a ſet of remedies, many of which evidently, and all probably, have an immediate power in the greater number of caſes * of diminiſhing arterial irritability; ſuch as medicines producing nauſea, opium, henbane, aconite, hemlock, tobacco, foxglove, lead, and perhaps arſenic, zinc, and copper.

Of the ſecond claſs are topical bleeding and other evacuants, and cold.

Of the third are rubefacients, friction, veſicatories, electricity, heat, cold, purgatives, diuretics, diaphoretics, ſialogogues, and ſometimes, though rarely and with the utmoſt caution, ſtimuli taken into the ſtomach.

This ſyſtem of practice I have tried, and with a ſucceſs much greater than that which I had long experienced from the remedies commonly employed. As my time has

* Probably they would in all, could we aſcertain the doſe.

chanced

chanced to permit, I have collected numerous facts, which not only support the general principles which I have formed, but point out the particular modifications of those principles. These observations will, I think, explain the important influence which the stomach has on the arterial system; and how a great variety of causes, some of which are in their own nature opposite, come through different roads to the same point, and produce the same ultimate effects in the animal economy.

Should my life be spared, I trust I shall be able to give these subjects an ample discussion.

In the mean time I flatter myself that those who by anticipation would treat my system as hypothetical, will suspend their decision, when they are informed that it is nothing more than an attempt to describe the invariable order of phænomena.

SUPPLEMENT

TO THE ABOVE.

Read Nov. 30.

When I laſt wrote I was not without hopes that I ſhould have been able, before this time, to have ſent you many additional facts relative to the ſubject of arterial compreſſion, collected from the obſervation of various medical friends in Glouceſterſhire. But though they are in poſſeſſion of ſuch facts, their profeſſional engagements have not hitherto permitted them to give me a detail of them in writing.

I may however ſelect the three following examples out of many others which have fallen within my own notice.

EXAMPLE

EXAMPLE I.

A lady who was affected with a whitloe on one of her fingers, attended with excruciating pain, felt almoſt inſtantaneous relief from my compreſſing the arteries on each ſide of the finger affected.

EXAMPLE II.

The lady, whoſe caſe I deſcribed at length in my former letter, ſoon after that was written, being much ſurpriſed by an unexpected viſit, was ſuddenly affected with a return of her convulſive complaints in a degree much more violent and general than ever. Her teeth were ſtrongly grated together; her features and limbs were forced into various contortions; her head was often ſuddenly raiſed from the pillow, and again immediately drawn back with the utmoſt velocity and force, and every muſcle throughout the body ſeemed in its turn to partake of the convulſions. Two or three perſons exerting themſelves at once were ſcarcely

 ſufficient

ſufficient to counteract the violence of theſe contractions.

In this ſtate I thought of having recourſe to the compreſſion of the carotid arteries, which in a few ſeconds had the uſual ſedative effect, to the new aſtoniſhment of all who were preſent. No ſooner, however, was the preſſure removed than the ſymptoms returned with their former violence. Mr. Atwood, eminent as a ſurgeon in this city, was a witneſs of the conſequences of this operation, which he repeated himſelf with a ſimilar effect.

EXAMPLE III.

The third caſe was that of a young lady who came to Bath by the recommendation of Dr. Reynolds, on account of a great variety of complaints, and more eſpecially a chronic pain towards the lower part of the ſternum, which was much aggravated by the horizontal poſture, eating, any attempts to uſe exerciſe, and all ſtrong emotions of the mind. I was firſt called to viſit her in the middle of the night. She had arrived in Bath late the preceding afternoon, after too haſty

haſty a journey, which had much fatigued her, and produced a violent pain in her ſtomach and bowels, attended with great flatulency. Theſe ſymptoms had not been relieved by ſeven grains of the ſtorax pill, and ten drops of tincture of opium; but had afterwards been ſomewhat alleviated by a draught of warm ſpirits and water, and a fomentation of brandy. She had had no ſtool the preceding day; but was free from fever and headach.

As the pain was extremely urgent, I ordered the fomentation to be repeated as occaſion might require; and a tea ſpoonful of the following mixture to be given every half hour in a glaſs of warm water, till the pain ſhould abate.

℞. ſpiritus ammoniæ compoſiti, ℥vjſs.
Tincturæ croci.
——— lavendulæ compoſitæ ſingularum, ℥ſs.
——— opii, guttas XL.

I ſaw her early the next morning, when ſhe had taken two doſes of the drops, which ſeemed to have agreed well. She had ſlept a good deal before they came, but was then in conſiderable pain in her ſtomach and bowels, without

without any alvine difcharge. She was free from ficknefs and fever. She was directed to take immediately a large fpoonful of caftor oil, and to repeat the fomentation and drops, as the circumftances of pain might require.

At four o'clock in the afternoon I again vifited her. The caftor oil had not operated. She had taken about feven drachms of the cordial drops, and had flept at intervals, but waked in great pain. About an hour before fhe had been fuddenly feized with a fit of alienation of mind, attended with heat of the forehead, unufual fenfibility with regard to external impreffions, and the moft anxious agitation. Some vomiting had occurred at various times after the beginning of the attack, though without affording her any relief. Her pulfe was quick and fluttering.

In this ftate of the fymptoms I made the ufual compreffion on one of the carotid arteries. By degrees fhe became calm, and after ten minutes the delirium totally difappeared, and never returned. A glyfter and an aperient draught produced a copious ftool in lefs than an hour, which immediately relieved the pain in her bowels.

When

When I ſaw her three hours afterwards, ſhe told me that her head had been affected with great confuſion, as if every thing was turning round; but that it was then totally free from every ſenſation of that nature.

My own experience has continued uniformly to verify the obſervations I before ſent you; convincing me that nervous diſorders are in reality nothing more than examples of undue determination of blood; or, at leaſt, vaſcular congeſtions, either general or topical.

After all, it is only the applicableneſs of a theory to practice which can aſcertain its truth, or eſtabliſh its value; and I can with the moſt perfect regard to veracity declare, that, guided by the theory which I have mentioned, I have in many inſtances ſucceeded in eradicating nervous diſeaſes after all others of the moſt approved remedies had either entirely failed, or, at beſt, afforded only a temporary mitigation.

ARTICLE IX.

A Case of an obstinate Quartan Ague, of five Months continuance, cured by Electricity; in a Letter to the Medical Society of London,

By THOMAS FOWLER, of Stafford, M. D. C. M. S. and Member of the Royal Medical and Physical Societies of Edinburgh.

Read April 16, 1789.

In the Medical Reports, which I lately published, on the use of arsenic in the cure of agues, I have given many strong proofs of its febrifuge virtues, and have recommended it as equivalent to the Peruvian bark in point of real efficacy. But as the efficacy of the most important remedies will fail in some cases, I shall consider it as no disparagement to the virtues of either bark or arsenic, to give you an account of a most obstinate case

 of

of ague, wherein not only theſe medicines, but every other probable remedy I could think of, proved ineffectual until the powers of electricity were tried.

April 12, 1787, Elizabeth Maſon, a ſervant, from the pariſh of Stone, aged twenty-ſeven, an in-patient at the Stafford Infirmary. She has been in the houſe a conſiderable time, and has been afflicted with a very inveterate quartan ague for upwards of five months paſt. The cold, hot, and ſweating ſtages were regular, unleſs when ſlightly interrupted by the uſe of medicines, of which ſhe has taken a large number.

She had the mineral ſolution adminiſtered in a regular manner, for a longer time than uſual, by which the fits were rendered milder, but not ſuſpended. Several attempts were made to exhibit the Peruvian bark, both in powder and decoction, but it always occaſioned ſickneſs, griping, and purging, even when combined with opiates and aromatics, ſo that a proper quantity, adequate to her relief, could not be taken. She had then eleven clyſters of the bark given, and bark poultices applied to the wriſts; by which means the fits were ſuſpended for the ſpace of a week

week at two different periods. She took alſo ſeveral doſes of Dover's powder (containing a ſcruple in each) about an hour before the expected acceſſion of the fit, aſſiſted by repeated draughts of warm diluents in bed, by which means ſhe ſweated freely, and once or twice miſſed the fit entirely; at other times ſhe only miſſed the cold ſtage, experiencing both the hot and ſweating ſtages, although in a milder degree.

She took alſo nauſeating doſes of antimonial wine for a week, but without relief, and then tried the ſame for ſeveral days combined with liquid laudanum, and took alſo a number of antimonial emetics, but with no better effect.

Several other medicines were exhibited, which have been known ſometimes to cure very inveterate agues, after the common remedies have failed; in particular, volatile alkali, crude ſal ammoniac, allum, and aromatics; by which the fits were ſeveral times rendered milder, but not ſuſpended.

It was at this period of the diſeaſe when I recollected that in the early part of my practice I had known a number of agues cured by the application of electricity, in different

parts

parts of the country, under the direction of perſons no way connected with the faculty. I obſerved that the chief cures were performed by a number of ſmart ſhocks being given, by which the patients were impreſſed with a ſtrong ſenſation of fear, and frequently thrown into a copious ſweat.

In conſequence of theſe remarks I reſolved to make trial of the ſame means in the preſent caſe. Accordingly I ordered the patient, as ſoon as ſhe perceived the leaſt ſymptom of the acceſſion of the fit, to receive ten or more ſmart ſhocks through her arms and thorax, from a ten ounce vial, until ſhe was ſeized with fear and began to ſweat, and then to go immediately into a warm bed, and promote the ſudorific effect for ſome hours, by taking frequent draughts of tepid ſmall wine whey.

April 15. At the approach of the fit on the twelfth, the electrical apparatus being applied, the patient was ſoon impreſſed with fear, and, after receiving ten ſhocks, was thrown into a ſweat, which, being aſſiſted by the preſcribed regimen, continued copious for ſeveral hours, and the remainder of the fit was extremely ſlight.

 Ordered

Ordered to repeat the electrical operation with the regimen at the approach of each fit.

April 20. She underwent the electrical operation on the fifteenth, but did not begin to ſweat till ſhe had received ſixteen ſhocks, when, with the aſſiſtance of the former regimen, ſhe ſweated freely for ſeveral hours, had no more of the fit, and was alert and in good ſpirits after. On the eighteenth by miſtake was not electrified, and had a very ſlight fit.

Ordered to continue the electrical operation and regimen.

April 23. The electrical ſhocks and regimen were repeated on the twenty-firſt exactly as on the fifteenth, and with the ſame ſalutary effects.

Ordered to continue the operation and regimen whenever ſhe perceives the approach of a fit.

May 11. She has not had the leaſt ſign of any return of ague, and therefore has had no occaſion to repeat the operation.

Diſmiſſed free from complaints.

Auguſt 10. She has continued quite well until a fortnight ago, when ſhe had a relapſe of

of her quartan ague, which proceeding in the ſame manner as before, ſhe was this day admitted again into the Infirmary.

Ordered to repeat the electrical ſhocks and regimen, on the approach of each fit, in the ſame manner as before.

Auguſt 24. She underwent the operation at the approach of the next fit, ſweated freely in bed for ſeveral hours after, had no more of the fit, and has remained quite well ever ſince.

Diſmiſſed cured.

OBSERVATIONS.

That this was a remarkable caſe for its obſtinacy and difficulty in being relieved, is fully evinced by the hiſtory of the diſeaſe, and therefore the means by which a cure was at laſt obtained deſerves the more attention.

The ague was of the quartan type, of long continuance, and reſiſted the influence of numerous and efficacious remedies, until (as I have already obſerved) the powers of electricity were tried. It was obſervable that when the paroxyſm was nearly ſubdued by the

the means uſed on the fifteenth, that on the eighteenth, when they were unluckily omitted, the diſeaſe ſhewed a ſtrong diſpoſition to return, which, however, by the next electrical operation was ſatisfactorily removed. It alſo merits particular notice, that when the patient, after having enjoyed a good ſtate of health for fourteen weeks, had had a relapſe for a fortnight, that the diſeaſe was again immediately removed by a ſingle application of the ſame means.

We find that many obſtinate agues have been ſuſpended and even cured by the uſe of ſudorifics, adminiſtered juſt before the acceſſion of the fit; and that many others have been effectually removed by the vulgar, on an empirical plan, by exciting an impreſſion of fear, which we know has been conſidered as an antiſpaſmodic; but as the previous ſudorific operations in this caſe had failed, it is reaſonable to conclude that the influence of fear had the moſt conſiderable ſhare in the preſent cure. Be that as it may, it is a pointed example (under numerous unpromiſing circumſtances) of the operative effects of electricity on the mental and corporal parts of the animal frame, being attended

tended with ſucceſs, and therefore deſerves to be repeated in a ſufficient number of caſes, in order to aſcertain, with ſome degree of preciſion, the real merits of electricity as a remedy for the cure of obſtinate agues. It may alſo be worth while to try the effects of fear, from the application of electricity, without allowing the patient to ſweat, with a view of determining whether the ſudorific operation materially aſſiſts its curative influence or not.

I beg leave, however, to recommend ſome caution in this mode of applying electricity (eſpecially with reſpect to hyſteric females), leſt in patients of a delicate and irritable conſtitution, the nervous ſyſtem ſhould be too much deranged by the effects of the operation, which certainly ought not to be perſiſted in whenever that circumſtance takes place. I would recommend, therefore, that on the firſt ſigns of an approaching fit, the operator begin with moderate ſhocks, and gradually increaſe them both in ſtrength and quickneſs (even if the numbers found requiſite for the purpoſe ſhould extend from ten to thirty) until an incipient ſweat be perceptible. This point being obtained, let the

ſudorific

ſudorific operation be kept up for ſeveral hours, by adopting the regimen that has been uſed in the preceding caſe; and if the fits ſhould continue to recur, let this proceſs be repeated for at leaſt two or three times, as a reaſonable trial of the effects of the remedy.

ARTICLE

ARTICLE X.

Case of an Abscess of the Breast successfully treated,

BY W. FARQUHARSON, OF EDINBURGH, M.D. AND C.M.S.

Read JULY 14th, 1788.

Mr. WILLIAM LOWNDES, aged eight, a young gentleman of a strong constitution and very active disposition, on the evening of the 9th of June, 1786, while overheated at play, fell from a considerable height into a deep river, about two hundred yards from his father's house. He struggled much, and was twice under water. In about five minutes he was taken out, carried home, stripped, put to bed, rubbed dry, and drank some brandy and water.

He

He ſlept well that night, was in perfect health next day, and eat his dinner with uncommon appetite. About ſeven o'clock in the evening he complained of being very drowſy, went to bed, and ſlept ſome hours. On waking he was ſeized with ſlight ſhiverings and ſickneſs at ſtomach, followed by ſevere retching and vomiting, which continued during the night, and increaſed in the morning.

June 11th, about eight o'clock in the morning, Mr. White, ſurgeon, and I were called to ſee him. He complained of great nauſea and headach; but he had little thirſt: his tongue was not furred, nor was his ſkin much hotter than ordinary; his pulſe was ſoft and regular, and beat 120 in the minute.

We ordered him a vomit immediately, a large doſe of ſaline mixture every two hours, and a diaphoretic-anodyne draught at bed-time. Next morning we found him conſiderably eaſier; the vomiting had ceaſed, and his pulſe had fallen to 90. However, for the three following days he grew worſe; his pulſe roſe to 126, and was feeble and unſteady; his thirſt increaſed; his ſkin became hot and dry; his vomiting returned; he

paſſed

paſſed a great quantity of urine, moſtly thin and pale, though ſometimes thick and high coloured; and he had a great degree of ſubſultus tendinum.

We ordered the ſaline draughts to be more frequently repeated; diluting drinks to be uſed in great quantity; the diaphoretic draughts to be exhibited at bed-time, and proper laxatives to be given occaſionally.

June 15th, he began to recover, and his pulſe again fell to 90, when he was ſeized with a violent pain in the left breaſt immediately under the nipple. This laſted only half an hour the firſt day, but returned with greater violence the day after; his pulſe roſe to 120, and he breathed with great difficulty; he likewiſe complained of his belly, which was ſometimes conſiderably ſwelled.

Theſe complaints yielded in ſome degree to bleeding, fomentations, bliſters, diaphoretics, and laxatives; but there ſtill remained ſuch quickneſs of pulſe, ſuch pain in the left ſide, ſuch difficulty of breathing, and ſuch anxiety, as indicated ſome dangerous affection of the breaſt. To remove this the ſaline mixture, ſaline laxatives, worm medicines, antimonials, the warm bath, milk-diet,

diet, country air, and gentle exercife, were tried in vain.

July 15th. All the fymptoms now indicating the prefence of fome fluid in the thorax, Dr. Stevenfon of Glafgow was confulted. On examining our young patient we perceived a confiderable fwelling on the left fide of his breaft, which pointed between the fixth and feventh ribs, about half way between the fternum and fpine. The pulfation of his heart could be diftinctly felt on his right fide; his pulfe was at 146; his fkin was hot and remarkably dry, and he was much afflicted with a hard tickling and almoft conftant cough. He likewife complained of violent pain in the left fide of his neck and left arm. The mufcles of that fide of his neck were very rigid, and the veins turgid. He alfo leaned fo much to the left fide that he had the appearance of being deformed.

As his urine was fcanty, his belly fwelled, and his thirft confiderable, there was reafon to fufpect a complication of hydrothorax with afcites, and with a view to this Dr. Stevenfon ordered fmall dofes of calomel at proper intervals, with a fufficient quantity

of

of chryſtals of tartar, to give him two or three ſtools a-day; at the ſame time an anodyne embrocation was ordered for his neck and arm.

By perſiſting in this courſe for ſome time he became eaſier; his urine increaſed in quantity, depoſiting a great deal of brawny ſediment; and the ſwelling of his belly diſappeared. But as the quickneſs of pulſe, the cough and difficulty of breathing ſtill continued; as the pulſation of the heart on the right ſide had become more perceptible, while he could not lie, even for a moment on that ſide, without danger of immediate ſuffocation; and as the tumor between the ribs had increaſed, an operation was determined upon, and a poultice ordered, that the integuments might become thinner.

Auguſt 7th. Mr. White made an opening into the cavity of the thorax through the moſt depending part of the tumor. A pound of pure bland pus was diſcharged immediately, and in about three hours as much more. A ſmall linen tent was introduced to ſerve as a conductor to the matter; and his ſide was dreſſed in the ordinary manner.

Every

Every ſymptom was now much relieved; his pulſe came down to 116; the pulſation of his heart on the right ſide diſappeared; he ſlept three hours on that ſide the ſecond night after the operation; the cough left him; he breathed without difficulty, and the pain of his neck and arm became moderate. A ſmall ſilver canula was introduced into the wound to give the matter free vent; his belly was ordered to be kept open by occaſional doſes of cryſtals of tartar, and a milk diet was ſtrictly enjoined.

Things now wore a promiſing aſpect; the matter, though diſcharged in great quantity, was perfectly mild and free from air; and he ſeemed to be gaining ſtrength very faſt, when, on the fifth day from the operation, he became feveriſh, hot and reſtleſs; his cough and difficulty of breathing returned; the matter acquired an offenſive ſmell, and his pulſe roſe to 140. He now felt the ſilver canula ſo uneaſy that we were obliged to withdraw it, and uſe only a bit of bougie. However, after taking a doſe of ſalts, and increaſing the quantity of the cryſtals of tartar, ſo as to keep his belly very open, the matter became more mild, his pulſe fell to 120,

and the fever abated much. He was now ordered aſs's milk, which however could not be procured for him in ſufficient quantity.

Although his pulſe was ſeldom under 120, yet he mended ſlowly till about the ſixth of September, when he began to complain of ſhivering fits and an aggravation of all his former ſymptoms. There now appeared a conſiderably inflamed tumor, about two inches higher than the wound, which was diſcuſſed in a few days by poultices and occaſional laxatives; and all the ſymptoms were much relieved by a great diſcharge of matter from the wound after a violent fit of coughing.

He continued to recover till the 22d, when the ſhiverings returned, and a ſecond tumor appeared in the ſame ſpot as the firſt. Every precaution was taken to diſcuſs it as formerly, but without effect, as, on the 27th, it burſt and diſcharged a conſiderable quantity of matter, and he again became eaſier.

He was now ordered the bark with proper laxatives; demulcents for his cough; the milk and vegetable diet were continued, and he drank aſs's milk in plenty. This courſe

agreed with him for some time; he became stronger, could walk with more freedom, and even bear the motion of a carriage; but about the beginning of October the matter became fœtid, although there was a considerable discharge from both wounds; his pulse continued at 120 in the morning, and he had a hectic paroxysm every afternoon, when his pulse rose to 130.

At this time Dr. Lettsom and Mr. John Hunter, of London, were consulted. Dr. Lettsom approved of the bark, but wished it to be conjoined with a saline effervescing draught to prevent it from increasing the fever. He ordered cicuta to be exhibited in as large doses as the patient's stomach would bear. At the same time he recommended a trial of a tepid bath of sea water, heated to 85 or 90 degrees, every other day, or as often as the patient's strength could bear it. He wished some light animal food to be given as soon as the state of the fever would admit of it.

Mr. John Hunter was of opinion that Nature should be as little interfered with as possible; and that neither linen tent nor canula was necessary, if the matter passed off freely;

freely; he approved of theſe, however, if at any time the matter was in danger of being confined for want of a proper outlet. In caſe of formation of new abſceſſes he recommended poultices.

At firſt the effervefcing draught diſagreed with the patient's ſtomach and puked him in the night, but afterwards he felt no inconvenience from them. He was now allowed ſome weak broth and a little light animal food at dinner; at the ſame time the ſtricteſt attention was paid to the regulation of his diet.

About this time he was put into a tepid bath of ſea water, heated to 88 degrees, every other night; this brought off a great quantity of matter, lowered his pulſe, and procured reſt.

He now became ſo much ſtronger that he could walk about a great deal without difficulty. The matter, however, at laſt became ſo thick that very little of it was diſcharged unleſs he either coughed, ſneezed, or cried; this occaſioned the formation of another abſceſs which burſt about an inch above the ſecond opening.

Nov. 4th. Mr. Bell of Edinburgh was consulted. He was decidedly of opinion that the principal symptoms arose from the matter being pent up; and therefore advised that an opening should be made large enough to admit of the matter being discharged with freedom; and he thought this would be easiest done by laying the three openings into one. However, if the matter still appeared to be confined, he thought it expedient to make a new opening between two of the inferior ribs in order to procure as depending a drain as possible. If every other method failed, he advised a canula to be introduced of sufficient length to reach the bottom of the cyst. He approved of the bark being continued, and thought a little more animal food might prove serviceable.

Nov. 7th. Mr. White laid the three openings into one; a good deal of matter and some blood came off immediately, and for several days a free discharge was kept up, which brought down his pulse from 136 to 112. He was now put on a fuller diet, and it agreed with him better than formerly; he gained strength and flesh daily; but the heal-

ing proceſs now went on ſo faſt, that, notwithſtanding eſcharotics were applied daily to the wound, it was almoſt conſtantly in danger of being choked up by the freſh granulations; and every five or ſix days an accumulation of matter raiſed his pulſe to 140, and gave him great uneaſineſs, till a fit of coughing, ſneezing, or crying, forced it off.

Dec. 3d. Mr. White enlarged the opening conſiderably, which, by giving vent to the pent-up matter, relieved all the ſymptoms for ſeveral weeks, and brought down the pulſe to 104 in the morning, yet he ſtill had an evening exacerbation which raiſed the pulſe to 120.

About the beginning of the year 1787 our patient caught cold by ſtanding ſome hours on the ice; this, however, yielded to the common remedies, and produced no bad effects; on the contrary, the cough brought off a great quantity of matter, and aſſiſted in keeping the external wound open.

From time to time we had the benefit of Dr. Lettſom's and Dr. Stevenſon's advice, and their preſcriptions were applied as far as the circumſtances of the caſe would admit. The medicines, diet, warm bath, and ex-

ercife, were regulated according to our patient's fituation; and every thing that depended on the phyfician's art fucceeded according to our wifhes; he now recovered his ftrength and flefh furprifingly; his appetite returned; he grew ftraighter; flept well and could bear the motion of a carriage, walk or ride without any inconvenience; yet all our induftry in applying efcharotics and ufing other methods, could not prevent the matter from accumulating frequently and producing the ufual train of bad fymptoms. There was now an abfolute neceffity of either making a new opening between two of the inferior ribs, or of introducing a canula of fufficient length to reach the bottom of the cyft, that there might be a conftant free difcharge of the matter fo as that the cyft might contract and the fides of it adhere.

As Mr. Bell had formerly advifed thefe meafures in very ftrong terms, he was called to fee our patient on the 28th of May. On examining his fide with a probe he found the cyft, though narrow, near five inches deep, and had reafon to fufpect that one of the ribs was carious. He ordered a long leaden canula to be introduced into the

wound;

wound; and, while it was preparing, ordered a bougie to be ufed, which was to be frequently withdrawn to allow the matter to be freely difcharged.

In a few weeks after the introduction of the tube a furprifing change took place; the hectic fymptoms difappeared; his pulfe fell to 100; he recovered his fhape perfectly; his appetite increafed fo much that we were obliged to lower the quality of his food; he could ufe the moft violent exercife, and could lie in bed on either fide, and his head off the pillow, without difficulty. In fhort the difcharge leffened rapidly, and by fhortening the canula gradually the fore healed from the bottom without any exfoliation of the carious rib, or any accident whatever, except our patient's catching cold on his return from Edinburgh, whither he had gone to wait on Mr. Bell about the middle of Auguft. Although the cold increafed the difcharge for a few days, yet it yielded to the common remedies, and the cure went on without interruption. By the end of September the canula was withdrawn, and the wound completely cicatrized.

Since that time he has continued in perfect health; has regained his loft growth, and takes as great a ſhare of the moſt active diverſions, ſuch as dancing, leaping, running, and wreſtling, with as much eaſe to himſelf as any boy of his age.

I muſt here remark that, during the whole courſe of this tedious caſe, our preſcriptions were completely fulfilled, and our directions punctually obeyed by the patient's parents, particularly by his excellent mother, who, with a ſelf-denial and perſeverance highly worthy of imitation, nobly ſacrificed every pleaſure that a ſociable diſpoſition and wealth could procure, and dedicated every moment that could be ſpared from the care of the younger part of her family to the melancholy taſk of nurſing her ſick ſon; and ſhe has now the pleaſure of reflecting, that ſhe has contributed in ſo great a degree to reſcue, from almoſt certain death, a child who promiſes to be a comfort to his family, and a valuable member of ſociety.

ARTICLE XI.

Case of diseased Liver.

By ABRAHAM LUDLOW, M. D. C. M. S.
of Bristol.

Read December 7, 1789.

Mr. Yeatman, an eminent apothecary of this city, aged fifty-nine, and of a bilious habit, in the spring of the year 1787 had a slight jaundice, which soon seemed to pass off: in the July following it returned in a more considerable degree, and, became obstinate. It however gave way to the usual methods of treatment; and, about the beginning of September, he returned from the country (to which he had retired for the purpose of recruiting himself) better than he had been since his attack in the spring; and so well

well as to enter upon the duties of his profession. About the 6th or 7th of October he was suddenly seized with a most excruciating pain in his right side, attended with violent vomitings and frequent rigors succeeded by much fever, and a considerable tension over the whole hepatic and epigastric regions. Immediately upon the seizure he had recourse to the saline aperient medicines he had been accustomed to; but none of these remaining upon his stomach, he sent for his son Mr. Morgan Yeatman (a surgeon of eminence), who apprehending his complaints to arise from an obstruction of bile, gave him small doses of antimonium tartarisatum, with frequent draughts of warm water; hoping by the action of vomiting, and by dilution, to remove the obstruction; but no relief being procured, and his father being much exhausted by the pain and vomiting, he gave him two grains of opium purificatum with ten grains of calomel; which procured some ease, and enabled the stomach to retain repeated doses of his opening medicines, by which two or three lax stools were obtained: notwithstanding this, as the influence of the opium declined so

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the pains returned. He then applied a large blifter over the part affected, and continued the occafional ufe of opium and calomel with faline and aperient medicines; by all which the violence of the painful affections was mitigated. The obftructions of bile and the tenfion, however, ftill continued; the fœces were clay-coloured, and the urine highly loaded with bile. In this fituation, with a pulfe at 116, and very weak, I firft faw him, when I recommended a perfeverance in the fame plan which had been adopted; under which, with fome fmall occafional variations, the painful affections, with the tenfion, entirely fubfided, and the obftruction of bile was wholly removed; the pulfe, however, was ftill too frequent, and every evening there was a marked exacerbation of fever, fucceeded by confiderable perfpiration, which at length ended in a perfect intermiffion. The cortex was then advifed, and in a few days the febrile paroxifm became flighter, the ftrength increafed, and things appeared fo favourable that I defifted from vifiting. But in lefs than a week his fon informed me his father was much worfe, and that he had not been free from fever for the laft three days.

Upon

Upon viſiting him I found his ſkin dry and hot, his tongue brown and parched, and his pulſe exceedingly languid, fluctuating from 126 to 130; there was no appearance, however, of obſtructed bile, his ſtools being of a natural colour, and the urine crude and limpid. In this apparently ſinking ſtate the neceſſity of ſupporting him was evident, of courſe the warmeſt cordials were ordered, and a generous diet adopted: notwithſtanding which his languor increaſed, his throat became aphthous; a conſiderable degree of ſubſultus and ſingultus attended; he wandered much, and had frequent chills, with ſuch faintneſs, that it was expected he would ſurvive but a ſhort time. He was ſtill, however, able to ſwallow, nor did he refuſe any thing which was offered to him; the powers of his cordial plan were therefore increaſed as much as poſſible, brandy being ſubſtituted for wine, and the cortex peruvianus added to the ſtrongeſt aromatics; a free uſe was alſo made of æther, ol. cinnamomi, camphora, et opium. In this method we proceeded for ſeven or eight days, expecting every day would be his laſt; when, there having been fewer of the irregular chills during

during the laſt twenty-four hours, he was attacked with a moſt violent rigor, attended with ſuch a degree of languor and coldneſs in the extremities that the family thought him dying: ſupplying him well, however, with the hotteſt and ſtrongeſt things they could get down, they prevented his ſinking, and at length a moſt intenſe heat came on; which was followed by a ſlight perſpiration and ſome ſmall remiſſion of fever; as ſoon as the heat was eſtabliſhed, the cortex, which I had directed to be omitted under any chill, and *at that time only*, was again added to the cordials, and given in the fulleſt quantity poſſible until the next rigor; which came on the next night about the ſame time, and was treated in the ſame manner, with the addition of a large doſe of confectio opiata. In ſhort, not to trouble you with a longer detail, by ſupporting him in the moſt generous manner, and loſing no time in the exhibition of the cortex, except under the cold fit, when a warm opiate was conſtantly given (a practice I have with great ſucceſs followed under ſuch apparent circumſtances of fever), he began to amend, and went on ſo faſt to recover, that in leſs than a month he was able

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to dine out at a friend's houſe, and appeared ſo well that I took my leave, much pleaſed with ſo extraordinary a recovery: nor had I ſeen him for more than a week, when, being in the neighbourhood on Sunday, 15th December, I called upon him, and found that he had been ſuddenly ſeized about four o'clock that morning with a moſt violent cough; which he conſidered as a return of what he called his old winter cough. As he had no fever, nor increaſed fulneſs of his pulſe, I directed him to take a doſe of tinct. opii camphorat. which ſoon allayed the violence of his cough; and by repeating it at bed-time he procured a good nigh', and felt ſo eaſy the next morning, that I did not viſit him the following day; but on Wedneſday his ſon informed me his father's cough was worſe than ever. I went immediately to ſee him, when I found he had ſpat up a conſiderable quantity of thickened pus, and a yellow fluid which, upon examination, was evidently bile: this laſt, as it was intermixed with curdled milk, I concluded was diſcharged from the ſtomach from the irritation of the cough; but his daughter aſſured me that this yellow fluid was not vomited

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up with the curdled milk, and produced more than half a pint with ſcarcely any thing intermixed, all of which had been coughed up. This induced me to wait that I might obſerve the manner in which it was raiſed; and I was ſoon convinced that it came up the trachea in the manner ſhe had deſcribed. From this time the cough continued almoſt inceſſantly until Saturday morning; when, after taking at his own requeſt ſome warm brandy and water, he deſired he might be left alone, being much diſpoſed to ſleep; but it proved the ſleep of death; for upon the return of his attendant (which was in leſs than half an hour) he was found breathleſs; nor did a perſon who was in a cloſet adjoining hear the leaſt ſtruggle or groan.

The particularity of the caſe naturally led me to requeſt an examination of the body, which was complied with; and on the next day it was opened by Mr. Lowe, in the preſence of his ſon, another gentleman, and myſelf, when the following appearances preſented themſelves:

In the thorax, the heart, blood veſſels, and the pericardium were in a natural ſtate.

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The left lung in a tolerably healthy condition.

The right lung adhered by all its inferior ſurface to the diaphragm, which was preſſed firmly up to it by a prominence in the liver; it alſo adhered for a conſiderable extent poſteriorly to the pleura; on its anterior part there was a conſiderable fulneſs, in which a fluctuation was diſcoverable.

In the abdomen every thing had a ſound appearance but the liver; this was of too dark a hue, and enlarged on its upper and convex part; the concave and inferior part, together with the gall bladder and the ducts, were in a ſound unobſtructed ſtate; it adhered by all its convex parts to the diaphragm, which it had puſhed up againſt, and almoſt into, the inferior part of the right lung; ſo that a firm adheſion had taken place between the ſuperior part of the liver, the intervening diaphragm, and the inferior ſurface of the lung.

Concluding, as well from theſe appearances, as from the nature of the patient's complaints, that theſe parts were the ſeat of diſeaſe, we judged it beſt to take out the liver, diaphragm, and lungs together, that

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we might have a more diſtinct view of the whole; which being done, we found by preſſing upon the anterior part of the right lung, where the fluctuation was diſcoverable, that the ſame kind of fluid which had been ſpitten up, iſſued in great abundance from the trachea, where it had been divided. This cavity was then laid open, when we diſcovered an aperture through the diaphragm into the upper and convex part of the liver; which was excavated ſo as to contain a pint and half of this vitiated fluid; with which neither pus nor any of the paronchymatous ſubſtance of the liver were intermixed; the ſurface of the cavity was ſmooth, and in it were many perforations which appeared not unlike ſections of the pori biliarii, from which probably this fluid was depoſited. The cavity in the lung was unequal becauſe a part of its ſubſtance had been deſtroyed; and it contained, together with this bilious fluid, a quantity of thickened mucus and pus; from this cavity ſeveral communications were traced into the branches of the trachea, by which no doubt the fluid deſcribed was conveyed.

In the Edinburgh Medical Eſſays, Art. 26, a caſe ſomewhat ſimilar was publiſhed by Dr. Edward Barry, where the diſeaſe began in the lung; here I ſhould judge it originated in the liver. The very particular account of circumſtances previous to the attack of the cough may appear tedious; but I thought it neceſſary to be thus circumſtantial, not only to point out the origin of the diſeaſe, but to ſhew under what internal accumulation of fluid in the ſubſtance of the liver, and deſtruction of part of the right lung, this patient put on the appearance of convaleſcence; and from thence to infer, how cautiouſly, after violent internal affections, a practitioner ſhould give or even entertain aſſurances of a patient's perfect ſafety.

ARTICLE XII.

Of Tetanus and of Convulsive Disorders.

By JAMES CURRIE, M.D. of Liverpool.

Read May 10, 1790.

The various objects which engage your attention will not admit of much of your time being employed on a single paper, and I have undertaken to write on a subject of some importance. It will be proper for me therefore to come directly to the point, and to avoid as much as possible every thing that is superfluous. What I have to offer shall be confined to the treatment of convulsive disorders, and especially of tetanus.

For this disease, so terrible in its progress, and so generally fatal in its issue, several new remedies have been proposed within the last thirty years, and each in its turn has had some share of public confidence. But opium,

mercury, the cold bath, and wine, are thoſe only which ſeem entitled to any reputation, and of each, it has been my fortune to have had ſome experience. This experience I proceed to give you with all the clearneſs and faithfulneſs in my power.

In the courſe of nine years practice I have ſeen ſeven caſes of this diſeaſe; of which two were idiopathic, and five the conſequence of wounds. Of theſe in order.

1. George Gardner, a ſoldier in the Staffordſhire militia, was put under my care by his officers, on the 20th of February, 1781. About a fortnight before, after ſevere dancing and hard drinking at a country wedding, in which he had been employed two days and nights, he fell ſuddenly into a fit which laſted an hour and a half, during which his conſciouſneſs was aboliſhed. On recovery he was affected with ſlight twitchings which gradually increaſed, and were followed by fixed ſpaſmodic contractions in different parts of the body, but more affecting the left ſide than the right. He had, when I ſaw him, all the ſymptoms of tetanus. The head was pulled towards the left ſhoulder, the left corner of the mouth was drawn upwards,

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the eyes were hollow, the countenance pale and ghaſtly, the face and neck bedewed with a cold ſweat; but his moſt diſtreſſing ſymptom was a violent pain under the enſiform cartilage, with a ſudden interruption of his breathing every fourth or fifth inſpiration by a convulſive hiccup, accompanied by a violent contraction of the muſcles of the abdomen and lower extremities. He felt on this occaſion as if he had received an unexpected blow on the ſcrobiculus cordis. Before I ſaw him he had been bled and vomited repeatedly, and had uſed the warm bath, not only without alleviation, but with aggravation, of his complaints. The three firſt remedies mentioned were uſed here in ſucceſſion, viz. opium, mercury, and the cold bath.

He firſt took a grain of opium every other hour, afterwards a grain every hour, and at laſt two grains every hour; but he grew worſe and worſe during the two days on which this courſe was continued. The ſpaſms extended to the back and ſhoulders, the head was at times retracted, and the muſcles of the abdomen partook of the general affection. Being no longer able to ſwallow the pills, he took no medicine of

any kind on the night of the 22d, in the courſe of which general convulſions came on and returned once or twice in every hour. The tincture of opium (liquid laudanum) was now directed to be given, and an ounce of the quick-ſilver ointment to be rubbed in on each thigh. In twenty-four hours he took two ounces and a half of the tincture without ſleep or alleviation of pain. The doſe being increaſed in the next twenty-ſix hours, he ſwallowed *five ounces and a half* of the laudanum, a quantity which, at that time, was I believe unexampled. He lay now in a ſtate of torpor. The rigidity of the ſpaſms was indeed much leſſened, and the general convulſions nearly gone; but the debility was extreme; a complete hemiplegia had ſupervened; the patient's eyes were fixed, and his ſpeech faltering and unintelligible.

As this young ſoldier appeared on the utmoſt verge of life, it ſeemed no longer ſafe to continue the laudanum, which had relieved ſpaſm only in ſo far as it had brought on general paralyſis. Intermitting this medicine therefore, ſmall doſes of camphor were occaſionally given in a liquid form, but the chief attention was directed to ſupporting the

the ſtrength by ſuch nouriſhment as could be ſwallowed. Gruel, with a ſmall quantity of wine, was ordered for him, though with much caution; for at that time I was not inſtructed with what ſafety and efficacy this laſt article might have been adminiſtered. For the next ſix days he ſeemed to revive: the general convulſions kept off, though the twitchings and convulſive hiccup continued. But on the night of the firſt of March he was ſeized, during ſleep, with a convulſion as ſevere as ever, and this was followed by a return of all his ſymptoms with their former violence. The jaws were indeed more completely locked than before, deglutition was become impoſſible, and the pain under the enſiform cartilage was ſo extreme as to force from the patient the moſt piercing cries. At this time the effects of the quickſilver ointment were apparent in the fœtor of the breath and in a conſiderable ſalivation.

Had poor Gardner been a man of any rank, or indeed had he been ſurrounded by his family, it is moſt probable that we muſt now have abandoned him to his fate. But our proceedings being neither obſtructed by the prejudices of ignorance nor the weak-

neſs of affection, another, and a laſt, effort for his life was reſolved on. Having heard that the cold bath had been employed with ſucceſs in tetanus in the Weſt Indies, particularly by Dr. Wright of Jamaica, and Mr. Cochrane of Nevis, and this practice correſponding with certain ſpeculations of my own, I had recourſe to it on this occaſion with ſome little confidence. With the conſent of his officers, Gardner was carried to the public ſalt-water baths of this town, then of temperature of 36° Farhenheit, and thrown headlong into it. The good effects were inſtantaneous. As he roſe from the firſt plunge, and lay ſtruggling on the ſurface of the water ſupported by two of his fellow-ſoldiers, we obſerved that he ſtretched out his left leg, which had for ſome time been retracted to the ham. But his head did not immediately recover the ſame freedom of motion, and therefore he was plunged down and raiſed to the ſurface ſucceſſively for upwards of a minute longer, the muſcles of the neck relaxing more and more after every plunge. When taken out, we felt ſome alarm: a general tremor was the only indication of life, the pulſe and the reſpiration being

being nearly, if not entirely, ſuſpended. Warm blankets had however been prepared, and general friction was diligently employed. The reſpiration and the pulſe became regular, the vital heat returned, the muſcles continued free of conſtriction, and the patient fell into a quiet and profound ſleep. In this he continued upwards of two hours, and when he awaked, to the aſtoniſhment of every one, he got up and walked acroſs the room, complaining of nothing but hunger and debility. The convulſive hiccup indeed returned, but in a ſlight degree, and gave way to the uſe of the cold bath, which he continued daily a fortnight longer; and in leſs than a month we had the ſatisfaction of ſeeing our patient under arms, able and willing for the ſervice of his country.

That the opium, though it failed in effecting a cure, had conſiderable influence in mitigating the diſeaſe, and prolonging life, is, I think, apparent.

That the mercury had little effect is clear from the ſecond convulſions coming on ſoon after the ſalivation appeared.

The ſucceſs of the cold bath in circumſtances ſo apparently deſperate, was not leſſened by bad effects of any kind. Though the

the patient was in a ſalivation when thrown into it, yet this was not ſtopped ſuddenly; it leſſened indeed immediately and ſoon diſappeared, but without any of thoſe bad conſequences ſo well deſcribed by Sir John Sylveſter and Dr. Dobſon. Subſequent experience has taught me to attribute ſome part of the ſuddenneſs of the benefit obtained in this inſtance to a circumſtance that diſtreſſed me much at the moment. The very inſtant that we were about to immerge poor Gardner he was ſeized with a general convulſion. We heſitated, but kept our purpoſe, and happily plunged him into the water with the convulſion upon him. I am alſo inclined to think that our ſucceſs is in part to be aſcribed to the powerful, general, and ſudden application of the remedy, and under this opinion I ſhould prefer immerſion in water, to its affuſion, the method employed by Dr. Wright.

2. Soon after this I was ſent for by a poor woman, who, in conſequence of difficult labour, and, as ſhe imagined, of local injury in ſome part of the uterus, was ſeized with the ſpaſmus cynicus, locked jaw, and other ſymptoms of tetanus. She was immediately

taken

taken to the cold bath, and thrown into it in the ſame manner as the former patient, and with ſimilar good effects. The ſpaſms diſappeared, and though they afterwards returned in a ſlight degree, they gave way entirely to a ſecond immerſion.

In the firſt of theſe caſes I was aſſiſted by Mr. Walker, ſurgeon's mate of the Staffordſhire militia; and in the ſecond caſe the effects of the cold bath were witneſſed by him and my friend Mr. Park.

So far of the idiopathic tetanus; my experience of the effects of the cold bath in the diſeaſe originating in wounds is neither ſo ſatisfactory nor ſo complete.

3. The firſt caſe of this kind that occurred to me was that of a maſter of a veſſel returning from ſea in the year 1784. The injury had been received on the leg, but the wound had little inflammation on it, though the patient was ſo far advanced in the diſeaſe as to go off in a general convulſion, before any remedy could be tried.

4. The ſecond caſe ſeemed rather an inſtance of locked jaw, properly ſo called, than of tetanus. The injury having been received

received on the jaw itſelf, the affection was confined to the muſcles of that part, and the diſeaſe ſeemed to be the triſmus inflammatoria of Sauvages. It gradually yielded to bleeding and the topical application of warm vapour, the cold bath producing no good effect.

5. In the third caſe we contented ourſelves with pouring cold water in ſucceſſive buckets on the patient's head, partly, becauſe this was the moſt convenient method, and partly, becauſe it is that employed by Dr. Wright, whoſe paper on the ſubject, in the ſixth volume of the London Medical Obſervations and Inquiries, had by this time appeared. While we were buſy in this way, and flattering ourſelves with ſome appearance of ſucceſs, the unhappy patient ſuddenly threw himſelf on his back, and a quantity of water entered his mouth. The effects were highly diſtreſſing. The muſcles of deglutition were unable either to carry down or to expel the fluid, and ſuch convulſions took place as led us to expect inſtant death. He recovered, however, ſo far as to regain his former ſituation, but the effects of his ſufferings on the

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bye-ſtanders prevented our continuing this practice, and he was carried off a few hours after.

6. A fourth inſtance of this diſeaſe I ſaw about two years and a half ago. There was no room for new practice, for the patient was too far advanced. He had been treated with opium and mercury as uſual, and as uſual died.

Theſe caſes afford little inference either in favour of or againſt the uſe of the cold bath in tetanus ariſing from wounds, but they are ſtated ſhortly that the account of my experience in this diſeaſe may be fair and complete.

It does not appear from Dr. Blane's Hiſtory of the Diſeaſes of the Fleet, that this remedy was uſed in any of the caſes of tetanus that occurred among the ſeamen in the late war. In ſpeaking of this diſeaſe Dr. Blane indeed mentions, that though Dr. Wright and Dr. Cochrane had found the cold bath ſucceſsful in caſes without local injury, they had acknowledged the practice to be ineffectual in the diſeaſe when ariſing from wounds. Dr. Blane may perhaps be accurate reſpecting Dr. Cochrane, whoſe publication on this

ſubject

ſubject I have not been able to procure, but he is miſtaken reſpecting Dr. Wright. This gentleman, in the paper already quoted, informs us that ſince he employed the cold bath he has not failed in effecting a cure in a ſingle inſtance of tetanus, without diſtinction or reſervation; and of the ſix caſes which he has detailed, in three the diſeaſe appears to have ariſen from local injury. This point is of high importance, and a miſtake reſpecting it in a work like that of Dr. Blane, which will no doubt be much conſulted in the future practice of the fleet, may, if paſſed unnoticed, have ſerious conſequences.

It is worthy of remark, that the uſe of the cold bath in tetanus is a practice of very ancient date. Dr. Wright, whoſe preciſion and candour are exemplary, mentions that he received the firſt hint of it from Dr. Lind of Haſlar. Hippocrates, however, was acquainted with it, as appears by Aphor. 21. lib. 5. It is alſo noticed by Avicenna, lib. 3. cap. 7. and in the collection of Schenkius, p. 120; an account of the ſucceſs of this practice in two caſes of tetanus is quoted from *Jaſon*, cap. 21. *De morbis cerebri, ex*

Valesco. Hippocrates indeed, and after him Avicenna, reſtrict the uſe of this remedy to the young and corpulent, and to the ſummer ſeaſon. They alſo confine it to caſes in which the diſeaſe has not originated in local injury, for it appears, by another of his aphoriſms, that the father of phyſic thought convulſions ſupervening to a wound always fatal *. The experience of Dr. Wright encourages us to extend this remedy to tetanus originating in wounds, but if it ſhould fail we are ſtill not to deſpair, as the following caſe will teſtify.

7. In July, 1787, a labouring man was brought into our Infirmary with a wound in his hand. He was under my friend Mr. Park's care, and the ſore was nearly healed up when an alarming rigidity appeared in the motion of the jaw. Opium and mercury were immediately preſcribed, with which were conjoined firſt the cold and afterwards the warm bath. Mr. Park, however, finding the diſeaſe to proceed with moſt unfavourable omens, called a conſultation, at which, in the abſence of the reſt of

* Hippoc. Aph. lib: iv. ſect. v. aph. 2.

our

our colleagues, we agreed to make a trial of bark and wine on the authority of Dr. Ruſſel of Philadelphia, whoſe excellent paper on this ſubject, in the ſecond volume of the American Philoſophical Tranſactions, had juſt appeared. We had, however, little or no hope, for the diſeaſe was far advanced, and its progreſs had been very rapid. At this time the jaw was not only rigidly contracted, but the ſpaſms had extended to the neck and back, the pain under the enſiform cartilage was moſt acute, and twice or thrice in every hour he was ſeized with general convulſions, each of which laſted about half a minute.

The patient was, however, a man of a vigorous mind, and in his perfect ſenſes; and his danger was not concealed from him. Death, he was told, muſt be the inevitable conſequence, unleſs he ſwallowed wine in large quantity, but this we verily believed would ſave him. At firſt bark was infuſed in the wine, but he could not ſwallow the mixture, and therefore we truſted to wine alone. It was wonderful to ſee the exertions which this poor fellow made. If the liquid was offered to him at an improper time, the effort

effort of deglutition brought on a general convulſion; nay a general convulſion was the conſequence of advancing it at ſuch a time towards his head. But watching the remiſſion of the ſpaſms, he was able to ſwallow a table ſpoonful or more at once, he himſelf giving the ſignal when the wine ſhould be adminiſtered *. In this way, through the opening made by the lapping of the upper jaw over the under one, he drew up and ſwallowed a quart of port wine in the courſe of two hours; at the end of which time he thought himſelf refreſhed, and was encouraged to proceed. At the end of twenty-four hours he had finiſhed his third bottle, and at this time it was evident that the down-hill progreſs of the diſeaſe was checked. Though the pain under the enſiform cartilage (the moſt excruciating of all the ſymptoms of tetanus) was little abated, yet he felt himſelf more able to bear it; and the general

* This circumſtance ſuggeſted to me the ſimilarity between this caſe and hydrophobia. I noticed it to my reſpected friend Dr. Percival, who has mentioned it in his valuable eſſay on that diſeaſe. V. Percival's Eſſays, vol. II. p. 366. 4th edition.

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convulſions were certainly leſs frequent and leſs ſevere. We continued our plan with patience and vigour, but for a long while life and death ſeemed to hang in equal ſcales. On the fifteenth day of this courſe he was affected with a ſlight nauſea and vomiting which ſoon went off, and thenceforward his recovery ſeemed more apparent. It was not however till he had been forty-two days under this treatment that his ſafety could be aſcertained, and during this time he ſwallowed a hundred and ten bottles of Port wine.

In this caſe bark was adminiſtered along with the wine towards the latter period of the complaint; and during the whole of it, gruel or milk in the quantity of a quart a day, or upwards, was given by way of nouriſhment. The milk, however, he preferred as agreeing better with the wine, and tending, as he conceived, to allay a burning ſenſation at his ſtomach, the effect of an acid ferment there.

Though the wine was given in ſuch quantity, yet it never produced any ſymptom of ebriety—it ſoothed the irritation on his nerves

nerves and comforted his mind, and, without increaſing the frequency of his pulſe, it augmented his ſtrength.

Every night he took from ſixty to a hundred and twenty drops of the tincture of opium, and, with the wine, this ſmall doſe ſeemed to have a more compoſing effect than thrice the quantity taken before he began it.

To allay the pain under the enſiform cartilage, cloths dipped in æther were applied externally with good effects. As I ſtood by him one day, preſſing the doſſils with my open hand to the ſcrobiculus cordis, he expreſſed himſelf relieved by the force which I applied. The ſame relief ſeemed to follow from a gentle and uniform preſſure on other parts ſuffering from ſpaſm. In conſequence of this rollers were applied round each thigh where ſpaſmodic twitchings had been very diſtreſſing, and afterwards, at his own requeſt, a general preſſure of the ſame kind was applied to the back and abdomen. Theſe bandages he would not ſuffer to be removed, but we poured æther on them occaſionally over the parts moſt affected by ſpaſm, guarding in the uſual way againſt the cold produced by too ſpeedy an evaporation.

At length our patient recovered. He is now a watchman, and calls on me occasionally. He complains of a ſtiffneſs at times in the muſcles of his back, and, though naturally a ſtrong and healthy looking man, his features retain the indelible impreſſions of his diſeaſe. His eye appears hollow, his face ſharp and pale, his cheeks and lips are ſkinny, and the maſſiter muſcles hard and ſhrivelled.

I have lately had an account of a caſe of this kind which occurred in a ſailor on the coaſt of Guinea, who recovered under the care of Mr. Robſon, an ingenious ſurgeon in the African trade, from a ſtate apparently deſperate, by a very liberal uſe of bark and ardent ſpirits.

To conclude this part of my ſubject, I have known two inſtances of this diſeaſe in horſes, both originating in wounds; the firſt of theſe was treated in the method firſt deſcribed. The cold bath was uſed repeatedly, and large doſes of opium employed in the form of clyſters; but the diſeaſe terminated fatally. The ſecond of theſe occurred in a horſe of my friend Dr. Camplin (whoſe aſſiſtance in the caſe of the watchman I ought

ought to have acknowledged), about a twelve-month ago on his journey to Bath. The doctor informs me that he gave him wine and opium, mixing sixty drops of laudanum with every pint of wine, and by this practice he had the pleasure of recovering him, though not till he had drank as much wine as he was worth; brandy or gin may perhaps be as successful in such cases.

It may be supposed that these instances of success in the use of the cold-bath and wine in tetanus would lead me to the employment of these remedies in other convulsive disorders. This has accordingly been the case; but of the use of wine I am not yet prepared to speak. Of the use of the cold-bath in such disorders I can speak with some confidence, as my experience of it is now of eight years duration.

In the convulsions of children I have found the cold bath a most useful remedy, whether the disorder originated in worms or other causes. I have seldom known it to fail in stopping the paroxysms, at least for some time, and thereby giving an opportunity of employing the means fitted to remove the particular irritation. I must however ob-

ſerve, that in early infancy I have uſed it with caution; ſometimes tempering the water when the weather was cold, and ſometimes pouring it on the patient, rather than immerſing the patient in it. I have in general made the application of cold in this way ſudden and tranſient, have employed means to ſecure re-action, and have avoided the remedy entirely in all caſes where the vital energy ſeemed much exhauſted. With theſe precautions I have ſeen great ſucceſs attend this remedy in a variety of inſtances. Minutes of nine of theſe I have preſerved, but I mean to give one only in detail.

John Slater, aged eight years, came under my care in the month of January, 1782. About two years before, while at play, he was ſeized ſuddenly with a convulſion which continued for half an hour, and had returned ever ſince at ſhort intervals. Various means had been employed for his relief but without ſucceſs; the fits were become more and more frequent, a hemiplegia had ſupervened, and the intellect was apparently loſt. For twenty-four hours he had lain in a ſtate of inſenſibility, motionleſs on the left ſide, and the muſcles of the other ſide only agitated by convulſive

convulſive tremors. We put him immediately into a tub of cold water, which inſtantly ſtopped the paroxyſm and threw him into a deep ſleep, out of which he awaked after two hours with a ſhriek, and fell into convulſions as before. The cold bath was repeated, and afterwards continued daily, preſent relief being always obtained by it. The interval was employed in adminiſtering the tin powder, which was worked off with calomel, but no worms were obſerved to be diſcharged. After ſeveral days, the convulſions returning, though with conſiderable abatement, I became diſſatisfied with the mode in which the bathing had been performed, the ſize of the tub employed never having admitted of ſudden immerſion. On this account we had the child conveyed to the public bath, into which he was thrown headlong, his father being ſtript in the water to receive him. The temperature of the bath was 43° Farenheit. He was repeatedly plunged down and taken up for half a minute; was taken out of the water free of convulſion, fell immediately into a profound ſleep and awaked clear of complaint. In

thefe refpects this cafe refembles that of Gardner firft defcribed. It refembles it alfo in this refpect, that convulfion had taken place at the moment of immerfion. The paralytic weaknefs of the fide remained, however, for fome time, but by the continued ufe of the bath it was at length entirely removed; and the powers of the mind, which had been totally fufpended, gradually returning, at the end of three months were perfectly reftored.

He continued well upwards of twenty months, was healthy and vigorous in body, and in the acquirement of knowledge remarkably acute. But on the 30th of December, 1783, his mother having ftruck him and frightened him much, he was feized in the night during fleep with general convulfion, in which he continued feveral hours without intermiffion. Being again called to him, I employed the fame remedy, but at the time of immerfion the convulfion was not on him. Sleep and refrefhment followed as before, but the paroxyfm returned in the evening though in a flighter degree. However, by perfeverance in the daily ufe of the bath,

and throwing him twice into the water with the *convulſions upon him*, in ſix days his health was reſtored.

I lament over the fate of this amiable boy. He continued from this time three years and a half in perfect health; grew ſtrong and tall, and ſhewed great affection of temper and ſenſibility of mind. But being violently agitated with fear and grief, he fell again into convulſions in the month of July, 1787. I was ſent for as uſual, but was abſent from town at a conſiderable diſtance. Having on former occaſions launched him myſelf into the bath, his mother, a ſuperſtitious woman in a low walk of life, would not permit this remedy to be uſed till my return. He lay for thirty hours convulſed and ſenſeleſs, and the firſt intelligence I had of his illneſs was accompanied by the account of his death.

This caſe differs materially from the convulſions of early infancy. I give it therefore not as an inſtance of theſe, but as a ſpecimen of a diſeaſe affecting children from four to twelve years of age, and which, though not very uncommon as far as I can judge, has not yet found its place in any ſyſtematic

work

work that I know of. The nofology of convulfive difeafes is indeed very imperfect, and the terms we employ in defcribing them are by no means precife. Thofe who have feen tetanus and the difeafe laft mentioned, will know, that what is called convulfion in both inftances, is in the one cafe and the other a very different affection. The convulfion of tetanus is a fudden and violent contraction of all the voluntary mufcles, throwing the frame into ftrong contortions, but lafting only a minute at moft, and feldom fo long. The patient, where the cafe terminates fatally, dies in it at laft, from the fpafmodic affection extending to the heart, or fometimes, perhaps, from the fufpenfion of refpiration. The convulfion in the other cafe, though it begins with violence, foon fubfides, leaving the body in a ftate approaching to coma; and though the feparate fibres of many of the mufcles keep in conftant vibration, and the turbulence of general convulfion returns occafionally, yet in the intervals the refpiration is natural and the pulfe little difturbed; voluntary motion and confcioufnefs are, however, completely fufpend-

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ed *. If this ſtate continues long, the violent commotions return more frequently, the breathing becomes laborious, the ſtrength is at length exhauſted, and the patient dies with the ſymptoms of apoplexy.

I conclude this paper, already too long, with a few general remarks.

1. It appears to me that the efficacy of the cold bath in convulſive diſorders is much promoted by its being employed during the preſence of convulſion. How I came to be led into this opinion may be ſeen in the caſe of Gardner. Much experience is required to eſtabliſh this as a general truth, and I give it as an opinion only. Yet it is an opinion ſo far confirmed in my own mind, that, where left to my own judgment, I ſhould act upon it in all ſuch caſes as I have deſcribed; and, ſhould occaſion require, I ſhould be anxious to have the experiment tried in my own perſon, and " to run the " hazard of the die." As madneſs is, I think, beſt combated in the height of the phrenzy, ſo I believe convulſive diſeaſes are moſt ca-

* This ſpecies of convulſion has been denominated *clonic*, in oppoſition to *tonic*, but with little propriety. All convulſions may be ſaid to be clonic.

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pable of remedy in the agitation of convulsion. I seem to have a glimpse of a general principle in nature that connects these facts so apparently different; but the ground is not yet firm enough to lay the foundation of a theory.

2. It may however seem to strengthen the above remark, that in spasmodic diseases, which rise not to general convulsion, the cold bath seems to be of inferior efficacy. In chorea Sancti Viti I have tried it frequently, but never found it of any service. This is one of the few diseases in which electricity is of decided advantage.

3. In the hysteric paroxysm the cold bath, or indeed the plentiful affusion of cold water, is an infallible remedy. Those who suppose that the terror it occasions ought, in this case, to prevent our having recourse to it, are, in my opinion, mistaken. Though the hysteric paroxysm be the offspring of passion, it is never occasioned, I will venture to assert, by the passion of fear. A sense of danger will always, I believe, prevent it, or indeed a powerful dread of any kind. I have known a tub of cold water kept in readiness, with the certainty of being plunged into it on the

recurrence

recurrence of the paroxiſm, cure this diſeaſe, without the remedy being ever actually tried. I know the hyſteric paroxyſm often takes place when *danger is over*, but that is another caſe.

4. I have tried the cold bath in the epileptic paroxyſm, but my experience of its effects is as yet too recent and too imperfect to be detailed. I am not ſo ſanguine as to expect that experience will accumulate rapidly on this ſubject. Many there are who will think my practice too hazardous to be copied, even after the account of its ſucceſs. This relates eſpecially to the uſe of the cold bath in convulſive diſorders in private practice; but in hoſpital practice, and in the practice of the fleet and army, the ſame objections do not preſent themſelves; and in theſe departments of the profeſſion it may be expected that its effects will be aſcertained.

Dr. Girdleſtone, in his account of the diſeaſes among the troops in India, mentions that hot Madeira is given with ſucceſs in the tetanus, which occurs in that climate; but he tells us, though not from his own experience, that the cold bath has been very

 unſucceſsful.

unſucceſsful. To what circumſtance it may be owing that a remedy, which has been ſo efficacious in the Weſt Indies, ſhould have failed in the Eaſt, does not appear; though if the circumſtances under which it was employed were fully related the difficulty might perhaps be explained. It may, however, be obſerved, that in the ſultry climate of India, where the human frame is greatly relaxed, it will not be ſafe to uſe the cold bath with the ſame freedom as in more northern regions. And it will undoubtedly be more ſafe, in any future trials of this remedy in that country, to uſe the method of affuſion employed by Dr. Wright, and ſo ſucceſsful in his practice in a ſimilar climate, inſtead of immerſion, which it appears was employed.

I preſent theſe facts and obſervations to you, Gentlemen, with the confidence of a man whoſe intentions are good. I have not ſpoken under the warmth of new conceptions, for my experience is, you ſee, of ſeveral years duration; and I anxiouſly hope that time will ſtamp my narration with the ſeal of truth. Be this as it may, I have written

written under the ſtrong impreſſion of the folly, baſeneſs, and guilt, of ſacrificing the intereſts of ſcience to a ſelfiſh purpoſe; and if I am in any reſpect inſtrumental in deceiving others, I ſolemnly declare it is becauſe I myſelf am deceived.

ARTICLE

ARTICLE XIII.

Case of extra Uterine Gestation, of the ventral Kind: including the Symptoms of the Patient from the earliest Period of Pregnancy to the Time of Death (fifteen Months); with the Appearances upon Dissection.

By WILLIAM TURNBULL, A. M. F. M. S.
SURGEON.

Read JANUARY 10, 1791.

THE human body is originally stampt with a peculiar conformation, and also impressed with strong propensities and passions, principally in subservience to those two grand and first laws of creation—Self-preservation and the regeneration of the species; these are more especially distinguishable in the appetite of hunger, and the mutual attachment of the sexes. These laws are not only universal,

verſal, but are alſo of a minutely extenſive nature, for they pervade the whole living body, ſince in every part it is endowed with a power both to reſiſt and to regenerate. The ſubject of the preſent hiſtory is an obvious illuſtration of the extent of this principle; for we have not merely an inſtance of nature's exertions for the renewal of the ſpecies, but likewiſe, on being counteracted, new reſources found out by her to anſwer the ſame grand deſign; and we can venture to affirm, that no ſubject is better calculated to ſhew the accommodating powers of the animal machine than theſe changes which take place in the parts concerned with the various inexplicable proceſſes of geſtation. For when we conſider, that the extremely ſmall dimenſions of the uterine cavity, the ſtill ſmaller capacities of the ovaria and fallopian tubes, being capable of ſo great an expanſion and dilatation as to admit the progreſſive evolutions of the fœtus, from its atomic ſtate to the weight of ſeveral pounds, are circumſtances of equal aſtoniſhment, yet, beyond diſpute, are admitted as certain and neceſſary facts; and while theſe leave us in ſilent admiration at the ſtupendous effect, they lead us inſenſibly into a contemplation

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of the great Firſt Cauſe, whoſe incomprehenſible power and wiſdom preſide univerſally over creation.

The veil of obſcurity which nature has ſo wiſely thrown over the myſterious work of conception has, at various periods, been productive of theories as complicated, ſyſtems as replete with intricacies, as the operations which they were intended to develop. However this deficiency of knowledge will appear, if not unimportant, at leaſt not greatly to be regretted, when, on conſideration, it is found, that, unleſs in the article of curioſity, mankind would be but little benefited, and diſeaſes incident to them would receive, in all probability, no alleviation were we in poſſeſſion of the ſecret; for which reaſon this ſubject has been regarded and treated more as an abſtruſe exerciſe for the imagination, affording an ample field for ſpeculative and controverſial diſputations, than an uſeful or medical enquiry.

Nothing can give a ſtronger ſpecimen of the extraordinary exertions and wonderful reſources of nature, in the production and preſervation of animals, than her operations in the occurrences of extra uterine impregnations.

These

These extra uterine cases may be consider-ed as consisting of two kinds—1st, where the fœtus is found within some part of the genital organs; 2dly, where the situation of the fœtus is unconnected with them, or external, with regard to the organs of generation. The former of these cases, it is evident, may take place in the ovaria and fallopian tubes; the latter in the cavity of the abdomen. But those which happen in the former are not so remarkable, on many accounts, as those in the latter situation; because the fœtus is abundantly supplied with the same blood-vessels as the uterus, and therefore it probably only requires a greater enlargement of these vessels already existing to effect a communication; but, in the pure ventral conception, parts intended for different purposes are made to supply this. Fallopian and ovarian cases only shew that parts intended for the purpose can perform it, but ventral demonstrate, that parts formed for different ends, will also succeed.

Although it is generally understood that the uterus is essentially necessary for the purposes of conception, yet these different fœtations incline us to believe that it is not ab-

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ſolutely ſo, and that the principal or only advantages, which that organ poſſeſſes over other living parts, are derived from its ſituation and dilatable powers, and from its being poſſeſſed of a muſcular ſtructure with an external opening; the former being admirably calculated for the purpoſes of growth and evolution, without any interference with the vital parts, and the latter for the prevention of hæmorrhages, and the expulſion of the fœtus.

From a careful peruſal and examination of the moſt approved authors * upon this ſubject, it appears by a variety of examples that impregnations in the ovaria and fallopian tubes are by no means to be conſidered as uncommon †.

The

* Extra uterine fœtations were not taken notice of before the beginning of the laſt century.

† Vide The Philoſophical Tranſactions of London. An. 1683. Vol. xiii. p. 285. An. 1698. Vol. xix. p. 314, 486, and 580. Vol. xx. p. 292. Vol. xxi. p. 121. An. 1700. Vol. xxii. p. 1000. An. 1704. Vol. xxiv. p. 2077. An. 1720. Vol. xxxi. p. 126. Vol. xxxii. p. 387. An. 1724. Vol. xxxiii. p. 171. An. 1727. Vol. xxxvi. p. 485. An. 1739. Vol. xli. p. 697. An. 1744. Vol. xliii. p. 304 and 529. An. 1746. Vol. xliv. p. 617. An. 1748. Vol. xlv. p. 121 and 131. An.

The references in the preceding note are replete with hiſtories of this kind, and of ruptures in the uterus. Many facts are adduced

An. 1751. Vol. xlvii. p. 92. Miſcellana. Natural. Curioſa; An. 1. Dec. 1. p. 255. An. 2. Dec. 11. p. 478. An. 4. Dec. 1. p. 76. —— Dec. 3. p. 167. An. 8. Dec. 11. p. 293. Memoires de l'Acad. de Sciences, An. 1709. Journal de Medicine, No. 1. Journal de Scavans. Tom. i. p. 134. —— Tom. v. p. 133. Ephemer. Act. Nat. Curioſ. Cent. 7. p. 24. Acta Erudit. Lipſ. An. 1706. p. 265. —— An. 1716. p. 526. —— An. 1718. p. 15. —— An. 1719. p. 343. —— An. 1720. p. 131. Acta Hoffminſia. Vol. v. p. 53. Zodiacus Medicus, Vol. i. Obſervat. 9. Commentar. Litterarum, Noremberg. An. 1732. Tho. Bartholine de Inſolitis partus Humani Viis. —— & Hiſtor. Anatom. Cent. 6. Epiſtol. Med. Cent. 4. Epiſt. 368. Caſpar. Bartholine de Ovar. Mulier. p. 36. Manget. Biblioth. Anatom. Andr. Ot. Goelicke Hiſtor. Chirurg. p. 186. Dan. Hoffman Annot. ad Hyp. Groeyan. p. 69. Theod. Craanen de Homine, p. 709. Joh. Riolanus, Anthrop. p. 180. Nicol. Vinetta de la Generat. de l'Homme, p. 428. Petr. Dionis des Accouchment, p. 93. Belloſte Chirurg. de l'Hoſpital. Dan. Men. Mathiæ. Obſervat. p. 106. Regn. de Graaf de Organis Mulier. p. 352. Iſbrand, de Diemerbroeck. Op. Anat. p. 135. M. Ern. Etmuller Epiſt. ad Ruſep de Ovar. &c. p. 4. Benj. Petermanus Obſervat. Medic. Cent. 2. p. 40. Ger. Blaſius Obſervat. Med. p. 66. Joh. Frid. Ortlob. Hiſtor. p. 275. Theoph. Bonetus Sepulchr. Anatom. p. 1367. Cyprianus de Hiſtor. Fœtus Humani ſalva matre ex Tuba excisi.

duced wherein the fœtus having eſcaped from ſome of theſe parts into the cavity of the abdomen, has remained in that ſituation for a number of years, and, in ſome inſtances, been retained during a long life, without any other inconvenience to the mother than the weight ariſing from the ſize of the infant. Theſe were ſometimes extracted or

excisi. Stalp. Vander Wiel Obſ. rar. p. 320. Arnold. Senguerdius de Oſtento Dolano. Joh. Ben. Sinibald Geneanthropol. p. 1. Joh. Conr. Pyarus Exercitat. 16. ad Hardir. Medical Eſſays of Edinburgh. Smellie's Caſes and Obſervations; and London Medical Journal, Vol. viii. Part iv. Art. 1. A caſe of extra uterine fœtus, by Dr. Underwood. Art. 2. Obſervations on the ſame, and on ruptures of the uterus, by Dr. Garthſhore.—In this ſenſible and judicious paper the Doctor has collected a number of hiſtories of ſuch caſes, with references to the reſpective authors from whom they were taken; but does not produce any inſtance of a true ventral conception in the remarks alluded to. A caſe of an ovarian fœtation has lately fell under the obſervation of Dr. Krohn at the Middleſex Hoſpital; this I have ſeen, but ſhall forbear taking any further notice of it, ſince I underſtand it is the Doctor's intention ſoon to bring it before the public.

In conſulting the preceding authorities I acknowledge myſelf much indebted to Dr. James Sims, the preſent worthy and learned Preſident of the Medical Society of London, for the uſe of his valuable library, which contains above 8000 volumes in medicine.

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difcharged in part, or entire, by abfceffes forming in the integuments of the abdomen, or groin, and by the anus.

But the hiftory of medicine furnifhes us with hardly an inftance of a true ventral cafe, well authenticated from diffection, wherein the impregnated ovum has been dropped, either from the ovary, or extremity of the fallopian tubes, into the belly of the female *, there procuring itfelf a refidence and

* It has been a queftion—in what manner does the impregnated ovum find its way into the cavity of the belly? The general opinion is, that the ovum having been formed in the ovary, is afterwards detached from it in all viviparous animals in confequence of the fruitful coitus, at the fame time the fimbriated extremity of the fallopian tubes embraces the ovary, and fo catches the ovum at the moment of detachment; therefore if the fallopian tube fhould either not embrace it in the ovary, or, what is moft probable, after having embraced, fhould loofe its hold before the feparation of the ovum takes place, this laft will neceffary fall into the cavity of the abdomen, where it is moft likely to adhere. There is no difficulty in fuppofing how it fhould adhere there, fince we have reafon to believe that the abdominal cavity is not more an extraneous one, with refpect to the ovum, than the cavity of the uterus itfelf; or, perhaps, on the principle of two living parts coming together, they may unite in the fame manner, as often occurs in various other parts of the body.

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nouriſhment, and all this taking place without any other attachment to the uterus, or its appendages, than in common with the abdominal viſcera. Theſe laſt circumſtances have occurred in the caſe which affords the following obſervations.

I ſhall, therefore, immediately proceed to lay before you the hiſtory of the ſymptoms from the earlieſt periods of pregnancy to the death of the patient, collected from the concurrent teſtimony of Mr. Fitch and Mr. Hancock, medical practitioners, who both occaſionally attended the greateſt part of the time; afterwards relate the appearances on diſſection, and cloſe with a few general obſervations.

HISTORY OF SYMPTOMS.

About the beginning of March, 1790, Mr. Fitch was ſent for by Mrs. Calvert (a woman about thirty-ſeven years of age, who reſided in the City Road), ſuppoſing that ſhe was arrived at or near her full period of pregnancy, and with a view of engaging him to attend her.

On entering the room he could not refrain from expreffing his aftonifhment at her appearance; fhe was extenuated almoft to a perfect fkeleton, and had a pallid fickly countenance. On examining the abdomen he found it diftended to an enormous degree, the fkin of which exhibited a very livid appearance, tinged with a yellow hue. Her breafts were of a painful hardnefs, and difcharged a butyraceous fluid, which had a much nearer refemblance to pus than milk; her eyes were deeply funk within their orbits, the pulfe quick and feeble.

On making enquiries relative to the miferable and afflicted fituation in which he found her, fhe informed him, that fhe had been four times pregnant, and fuppofed herfelf to be in the fame ftate again ever fince the beginning of July, 1789 *. At this time violent pains began to attack her bowels, which increafed with her pregnancy, and gradually affected her ftomach; notwith-

* It is worth remarking here, that fhe never menftruated during her pregnancy, until between two and three months preceding her death, then in a very fmall quantity, and at irregular periods. This is a very uncommon event in extra uterine impregnations.

ftanding

ſtanding her recourſe to various medical applications, with very ſhort intervals of eaſe, her pain ſtill continued. In February, about a month before he was called in, ſhe had been ſeized with a moſt violent paroxyſm of pain, attended with a flooding; this ſhe ſuppoſed to be her labour, and ſent for her midwife; but before ſhe arrived ſomething was expelled from the uterus, with the appearance of a placenta, and which the midwife, on examining, declared to be ſo. Before this occurrence ſhe had felt the child very diſtinctly moving, but never to any great degree afterwards; ſhe conſtantly complained, from the firſt time ſhe perceived its motions, that it laid very high up, and that ſhe had, in every reſpect, experienced very different ſenſations from thoſe which ſhe had uſually in any former pregnancy.

The hæmorrhage continued about four weeks from the time of its firſt appearance until Mr. Fitch came, but not with the ſame violence.

On examining her he found the os tincæ ſo very much dilated, that with great eaſe he introduced his three fingers into the cavity of the uterus, the internal ſurface of which

was found very irregular. It is worthy of remark here, that the uterus took on a particular diſpoſition for action, about the uſual period of parturition.

The abdomen, particularly on the right ſide, diſcovered conſiderable hardneſs on touching it externally, and was much diſtended in the direction of the liver, particularly upwards, and much leſs towards the lower part. She was affected alternately with diarrhœa and conſtipation, accompanied with violent and frequent vomitings, and with a painful uneaſineſs on the right hypochondrium and region of the ſtomach, which laſt felt as if ſomething was continually puſhing it up. From theſe ſymptoms, and every circumſtance which he could diſcover, he imagined that a depoſition of coagulable lymph had taken place in the cavity of the abdomen, and that irritation had excited an extraordinary action in the veſſels of the uterus, for this reaſon he conſidered that maſs to be a coagulum of lymph, which the midwife had pronounced to be placenta.

From theſe ideas he acquainted the patient and her friends, that he did not imagine her to be pregnant; and communicated

his

his ſentiments reſpecting her ſituation, and the means moſt likely to alleviate her ſufferings:—with this view he employed ſuch medicines as would tend to promote abſorption, and began firſt by adminiſtering an emetic, and then in a day or two afterwards an active carthartic, which ſhe bore very well, notwithſtanding her emaciated ſtate, and expreſſed herſelf conſiderably relieved by theſe evacuations.

After theſe remedies he proceeded to uſe gentle mercurial frictions, at the ſame time giving ſmall doſes of calomel and opium: after purſuing this plan about a fortnight, he had the happineſs of ſeeing his patient very much recovered.

The abdomen on the left ſide was much leſſened; the livid complexion greatly changed, the diſcharge of blood had entirely diſappeared, and the pulſe had become fuller, ſtronger, and more regular. From ſo conſiderable an amendment, and ſuch a happy change in the ſymptoms, he flattered himſelf that the cauſe producing irritation was much diminiſhed. Soon after this he was obliged to deſiſt from the mercurial courſe, on account of a ptyaliſm ſupervening. She complained,

plained, at this period, of a painful tumour on the right breaſt, that afterwards ſuppurated and formed a very large abſceſs, which was opened and diſcharged a conſiderable quantity of matter. In every other reſpect his patient was aſtoniſhingly recovered; the abdomen on the left ſide was reduced nearly to its natural ſize, and the right alſo much diminiſhed; the livid yellow complexion nearly removed, and a more healthy florid one ſucceeded; the ſtomach too was conſiderably relieved, the ſickneſs as well as vomiting nearly ſubſided, and the appetite and ſtrength very much reſtored.

Upon the whole, ſhe was ſo far recovered as to diſcharge the nurſe and follow her domeſtic employments, but ſtill at times complained of a painful uneaſineſs on the right ſide; alſo frequently inſiſted upon her being pregnant, and that the child lay dead within her; and propoſed queſtions relative to the poſſibility of opening her body, and removing the child.

Throughout the whole time of Mr. Fitch's attendance (which was between three and four months) he was compelled to have frequent recourſe to warm aperients to obviate that

that coſtiveneſs and flatulency which had been exceedingly troubleſome to her.

She had now ſo much recovered as to diſpenſe with further medical attendance *, and continued in a ſtate of convaleſcence for about ſix weeks, and till within a month of her diſſolution, when all the ſymptoms returning, Mr. Hancock was ſent for (who had occaſionally ſeen her in the firſt periods of geſtation); he coincided with Mr. Fitch in reſpect to her ſituation, purſued a ſimilar treatment, and is acquainted with all the circumſtances related in this hiſtory.

He informed me, that during the laſt ten days of her exiſtence, the diarrhœa had entirely ceaſed, and was ſucceeded by ſuch an obſtinate conſtipation as to reſiſt every remedy that was employed to remove it: ſhe continued without any natural paſſage, and the excrements were voided by the mouth. She complained of much pain in the head and in the inteſtines extending to the left

* In conſequence of this conſiderable amendment, Mr. Fitch ceaſed from viſiting her, after an attendance from March to the June following; and from the latter month until the middle of Auguſt ſhe enjoyed, as it is obſerved, a tolerable good ſtate of health.

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P. I.

P. II.

P. III.

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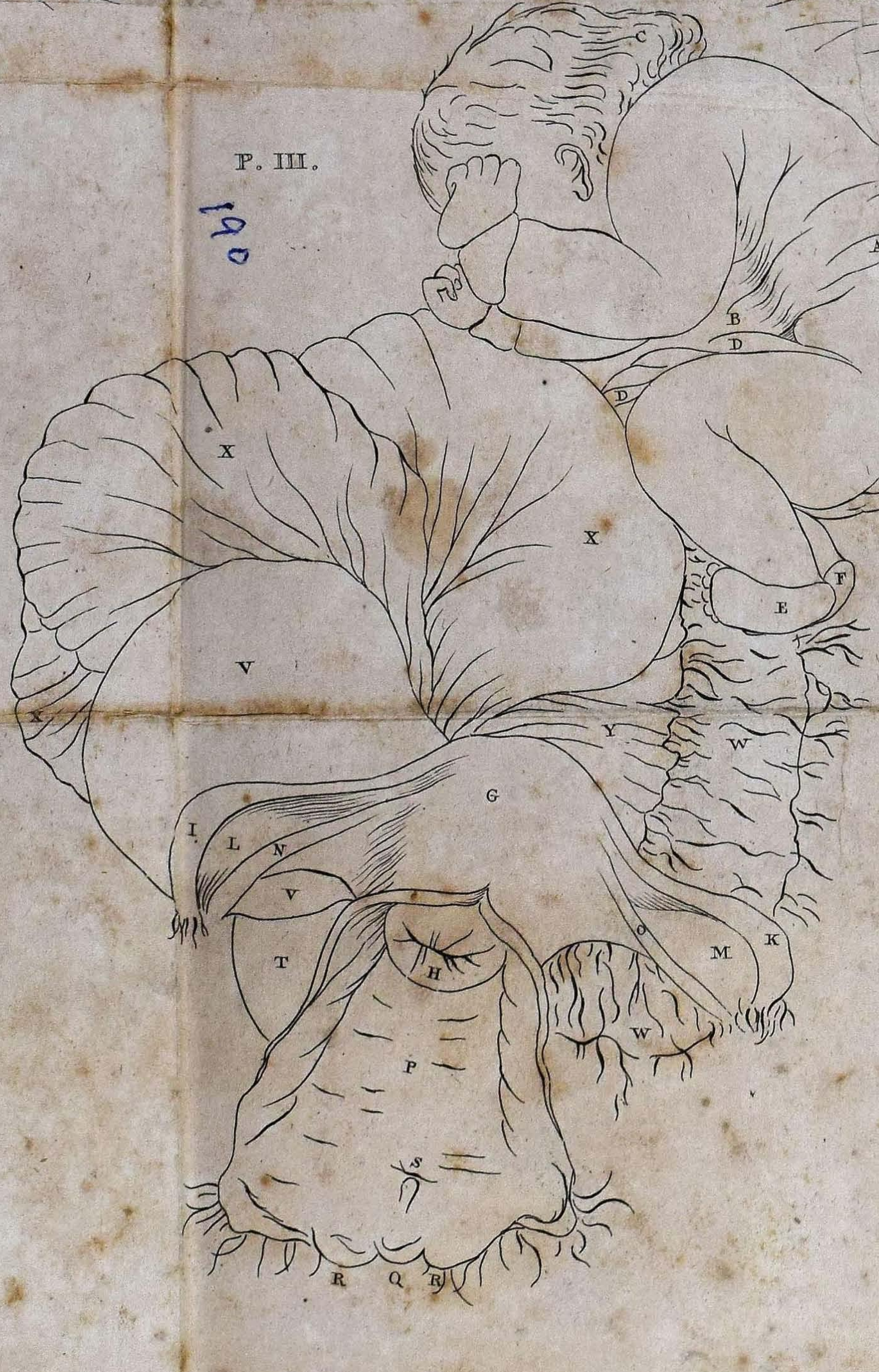


EXPLANATION OF THE PLATES

ILLUSTRATING

MR. TURNBULL's CASE OF UTERINE GESTATION.

[*To be placed after* Plate IV.]

PLATE I.

Reprefenting, in nearly a fide view, the appearances which prefented upon firft opening the body of the woman, with the child in fitu.

A The head of the child above the convolutions of the inteftines.

B B The hands of the child placed over its face.

C A portion of the liver.

D The ftomach.

E The omentum.

F The tumour fituated in the broad ligament on the left fide of the womb.

G The urinary bladder.

HHHHHHHHHHH various convolutions of the inteftines.

PLATE II.

Nearly a front view of the body, fhowing the fœtus removed from its natural fituation, exhibiting the internal furface of the facculus which contained it, &c.

A The right fide of the fœtus, with large folds in the back and fide, arifing from preffure of the furrounding vifcera.

B The back part of the head, preffed into folds in the fame manner as the back.

C The funis.

D The termination of the funis in the facculus, near the part where it was ruptured.

E E The facculus, or placenta, which contained the fœtus, and was ruptured previous to the body being opened.

F F The blind pouches in the middle of the facculus.

G The tumour in the broad ligament on the left fide, appearing like a contracted uterus after delivery.

H The urinary bladder.

I Smphyfis pubis.

KKKKKK various convolutions of the inteftines.

L The liver.

M The ftomach.

N The omentum.

PLATE III.

Shows (upon a larger fcale) the left fide of the fœtus, with a pofterior view of the organs of generation, and other parts concerned, as they are preferved in the mufeum of T. Pole.

A The child compreffed in numerous folds.

B A large depreffion made by the child's arm.

C A large projecting ridge in the fcalp, occafioned by preffure.

D D The funis.

E The fole of the left foot turned outwards.

The

F The fole of the right foot turned toward the left.

G The womb of its natural fize.

H The mouth of the womb rather enlarged.

I The right Fallopian tube.

K The left Fallopian tube.

L The right ovarium.

M The left ovarium.

N The right round ligament.

O The left round ligament.

P The vagina.

Q The clitoris.

RR Nymphæ.

S The orifice of the urethra.

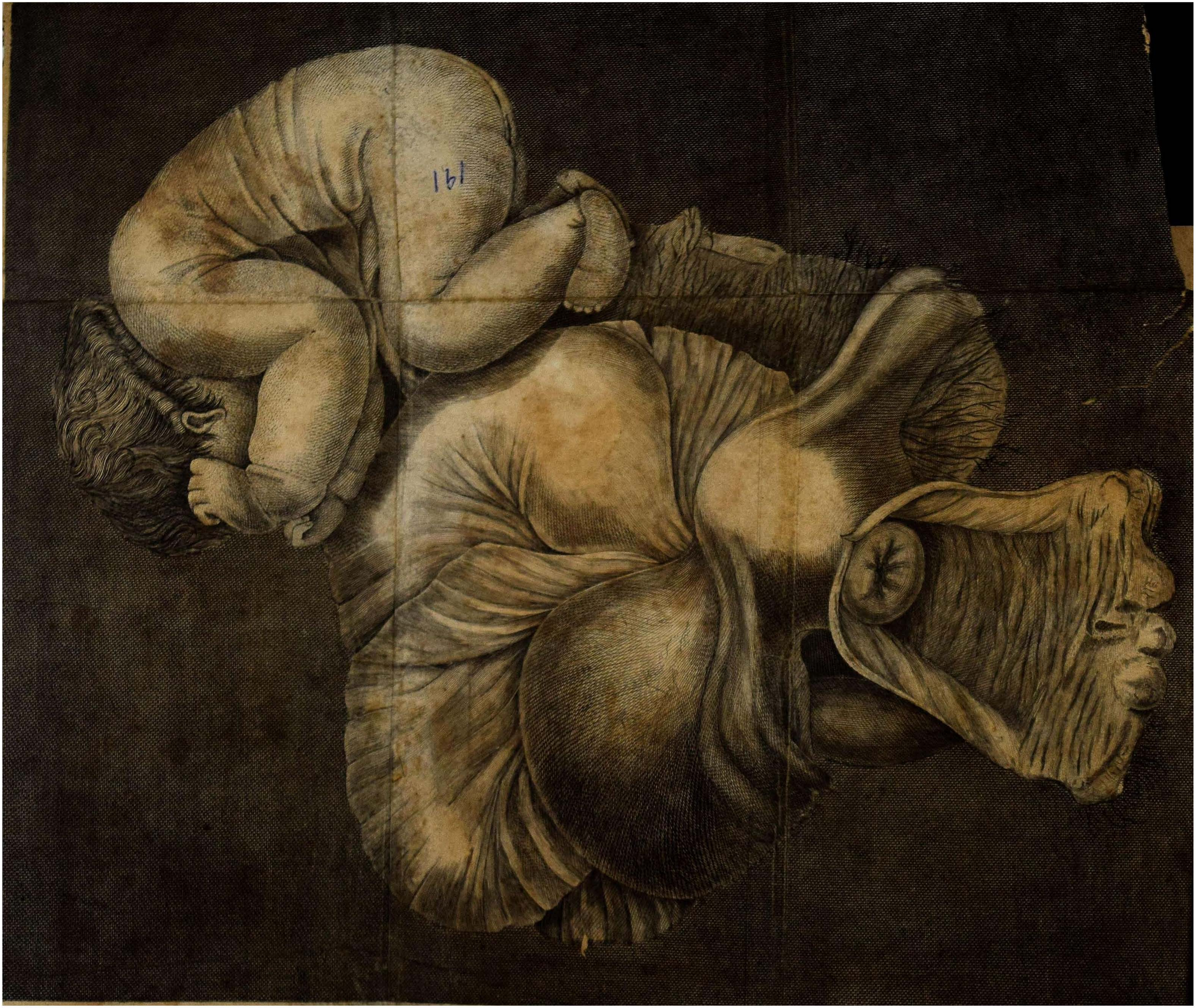
T Part of the urinary bladder.

VV The large tumour in the broad ligament.

WW The pofterior furface of the fac, or placenta, giving off vafcular filaments to the abdominal vifcera in general, as a medium of connection for the fupport of the child.

XXX Convolutions of the colon, to which the fac, or placenta, was attached, together with the mefocolon.

Y A portion of the mefentery, from which the inteftines are removed, in order to fhew the pofterior furface of the facculus.



groin; the pulſe became ſmall, quick, and irregular, attended with ſingultus, vomitings, and other ſymptoms of exceſſive irritation, which continued to increaſe until Friday the tenth of September, when death happily relieved her from a complicated ſtate of miſery.

APPEARANCES ON DISSECTION.

On Sunday, the 12th of September (two days ſucceeding her diſſolution), I was called in by Mr. Hancock, and Mr. Kannen, another medical practitioner, to examine the body. On applying my hand to the parietes of the abdomen, I perceived ſuch a large hard, ſpherical body, ſituated contiguous to the liver, as made me conjecture that it was ſomething more than a ſchirroſity of that viſcus. This enlargement felt very regular and was incapable of compreſſion.

On making an opening into the abdomen, by beginning an inciſion from the appendix enſiformis, continuing it in a ſtraight line to the ſymphyſis of the pubes; and thus laying open the abdomen, the ſituation and appearance

pearance of the fœtus and abdominal contents were as follow.——In the right hypochondrium the fœtus was ſeated nearly in an erect poſture, the back part of its head covered by the edge of the concave ſide of the liver, puſhing it up towards the diaphragm. The arms were bent upwards with the hands clinched and compreſſing the features of the face, which was directed obliquely towards the umbilicus of the mother. The fœtus was ſo completely immured among the inteſtines, that no other parts were perceptible but the head and hands. The convolutions of the ſmall inteſtines ſurrounded the neck of the infant in ſuch a manner as to form a kind of *ruff*. The placenta was ſo extremely delicate and poſſeſſed ſo little of its natural characteriſtics, that, at firſt view, I conceived it to be a thin membranous ſubſtance, formed by an exudation from the ſurface of the bowels in conſequence of inflammation, an effect that not uncommonly happens from that cauſe. This membrane, in which the veſſels were exceedingly ſmall (ſo as to render the tracing of them with the knife impracticable), did not exceed in thickneſs one tenth of an inch, was ruptured at

that

that part where the child's head appeared, and ſent off filaments from its reflected portions, to the peritoneum, ſtomach, liver, inteſtines, meſentery, meſo-colon, and to the abdominal parietes.

At the inferior part of this membrane there were two pouches, about three inches diſtant from each other, which led to, and were ſuperficially connected with, a tumour, of which I ſhall preſently have occaſion to take notice. The inteſtines, which exhibited rather a livid appearance, were exceedingly diſtended with air, and their blood-veſſels turgid and full; in every reſpect they diſcovered the preſence of much inflammation.

A tumour, the ſize of a large orange, of a flattened pyriform figure, was ſituated in the cavity of the pelvis immediately poſterior to the bladder, occupying the ſeat of the uterus, and entirely covering and diſplacing it in ſuch a manner as led us to conclude it was that organ, until farther inſpection proved it to be neither the uterus, or a diſeaſed ovarium, but a ſubſtance compoſed of innumerable cells, varying from the ſize of a pea

to that of a ſmall hazel nut, attached to the broad ligament of the left ſide.

This body received alſo a few fibres of the placenta in common with other parts. Some who ſaw this preparation have ſuggeſted, that this parenchymatous tumour has been intended to anſwer the purpoſe of the maternal portion of the placenta, but I confeſs my difference of opinion from thoſe who imagine ſo; if this had been the caſe, there would have been ſome particular vaſcular medium, or connection, between it and the funis umbilicalis, which we have not been able to diſcover.

Having repreſented to you the real appearances which the fœtus and abdominal contents diſcovered on removing the integuments, I ſhall proceed to ſtate what appeared upon a more minute examination of their relative ſituation and connexions.

I found a conſiderable difficulty on attempting to remove the child from the cavity which it had fortuitouſly formed among the inteſtines of the right ſide, which ſo completely fitted, and ſo cloſely applied to its body, as to occaſion the great reſiſtance which

which I experienced in removing it from this ſituation.

This cavity contained no fluid of any kind, was lined by, and received a poliſh from, the ſacculus or placenta, which ſeemed to originate from this part, and ſent off fimbriated portions, in the manner before mentioned, to a great part of the viſceral contents of the abdomen.

The fœtus was a female, full grown, perfectly formed, and as well nouriſhed as the healthieſt child at that period; but, according to the firſt ſymptoms of pregnancy, it was ſuppoſed to have remained in this ſituation fifteen months.

The whole body was compreſſed into numerous large folds, and covered with a bilious incruſtation, which it received from its proximity to the gall-bladder. The legs were bent backwards upon the nates and thighs, the latter drawn up towards its belly, and reſted upon the arch of the colon, where it runs towards the liver and beneath the veſſicula fellis, having diſplaced the other inteſtines, and preſſing them in various directions. The funis umbilicalis, which mea-

ſured ten inches in length, was of the uſual thickneſs, until it arrived within two inches or leſs of its attachment to the placenta, where it ſuddenly became ſo ſlender as not to exceed a ſmall crow-quill in diameter, and paſſed between thoſe convolutions of the colon and meſo-colon which were contiguous to it; at this place the veſſels of the funis were expanded and loſt upon their ſurface*. The colon had ſeveral ruptures in that part where the infant was ſeated.

The ſtomach, kidneys, and liver, were nearly in a natural ſtate; the cellular ſubſtance, however, of the latter and of the right kidney was in a ſmall degree condenſed by compreſſion from the fœtus, which alſo had puſhed the liver up towards the diaphragm, and the kidney of the ſame ſide towards the bladder.

Having now fully examined the parts, and with the greateſt caution avoided deranging them, from a ſolicitude that my other medical friends might have an opportunity of

* The fœtus muſt have neceſſarily been ſupported by blood from the veſſels of the meſo-colon; for thoſe of the umbilical cord ran into, and anaſtomoſed with, the veſſels of that part.

bearing

bearing teſtimony to this extraordinary and almoſt unequalled occurrence *, I now replaced them in their former ſituation; and by

* The one which bears the ſtrongeſt analogy to this, of any I have met with, fell under the care of the late Mr. Clarke, a practitioner of great eminence in Northamptonſhire, the father of my worthy and ingenious friend Dr. Clarke, teacher of midwifery in London, who favoured me with the following hiſtory.

" Some years ago my father was ſent for to attend a " woman, who, after the uſual time of nine months, was " ſeized with the pains of labour. She had paſſed through " her pregnancy without any remarkable ſymptoms which " might lead to a knowledge of her ſituation, and was of " the uſual bulk of a woman at the full time. Upon ex- " amination he found the os uteri very high up, and not " in the ſmalleſt degree dilated, although there were al- " ternate attacks and remiſſions of pain; he therefore " conſidered they muſt be owing to ſome irritation, and, " having ordered for her what he thought proper, left her. " At this time the child could be felt through the parietes " of the abdomen. He was not called to her again until " after the ſpace of eight days, during which time ſhe had " conſtantly been in pain; the os uteri ſtill continued in " the ſame rigid ſtate. This led him to make a more " particular examination of the caſe than he had done be- " fore, when he could diſtinctly feel that the cervix was " of the ſame length as in an unimpregnated uterus, and " thought that he could diſtinguiſh the uterus not enlarged. " Laying all theſe things together he was perſuaded that " the child muſt be extra uterine. He was induced from

 " the

by a requeſt to the huſband, who poſſeſſed a mind ſuperior to common prejudice, I readily obtained leave to introduce on the following day

" the importance of the caſe to have a conſultation, and " accordingly ſent for a Mr. Mansfield, a very eminent " ſurgeon and man-midwife at Thrapſton in Northamp- " tonſhire.

" The woman being conſiderably exhauſted by the " long continuance of the pains, and the child being pro- " bably alive, it was determined to cut into the belly as " the only means of delivering the child, or preſerving " the mother. An inciſion was accordingly made into " the abdomen, on the ſide where the child lay, juſt " enough to extract it. Unfortunately the child was found " dead.

" The child being taken away, the placenta was found " adhering generally to the kidneys, inteſtines, &c. it was " agreed that it ſhould alſo be brought away, which was " done.

" The woman, who had already loſt much blood during " the operation, loſt more on the delivery of the placenta, " and, weakened by the diſcharge, ſhe died in about four " hours after the operation.

" Indeed it ſeems hardly poſſible, that, under theſe cir- " cumſtances, a woman can recover, becauſe, if the placenta " be brought away, ſhe muſt almoſt inevitably fall a ſacri- " fice to the conſequent flooding; and, if the placenta be " left behind, we are warranted by experience to expect " that ſuch a maſs of dead matter remaining in the cavity " of the abdomen can hardly fail to produce the worſt " effects."

Several

day my friends Drs. Fox, Clarke, and Turnbull, Mr. Orange and Mr. Pole, with ſome other profeſſional men. The laſt of thoſe gentlemen, an ingenious ſurgeon *, politely offered to take drawings of the parts, which he afterwards did in a variety of

Several other very uſeful remarks were ſent me by the above gentleman on this caſe, but I am ſorry that the length of theſe obſervations already prevents me from inſerting them.

It is to be regretted that no opportunity was allowed after death of examining the body; upon this account it is difficult to aſcertain whether the caſe was ventral, ovarial, tubal, or whether the fœtus had eſcaped into the cavity from a rupture of the uterus. Of this dubitable nature may be ranked the caſe mentioned by Jean Joſeph Courtial, in his Nouvelles Obſervations Anatomiques ſur les Oſ. Obſ. 10, p. 86; likewiſe that related by Dr. Denman †, and communicated to him by the late profeſſor Hamilton of Glaſgow.

* A gentleman well verſed in anatomical purſuits, whoſe elegant collection of anatomical drawings, models, and preparations, evince an induſtry and ingenuity ſuperior to the generality of men, engaged in that branch of ſcience, and who has lately publiſhed a valuable work upon the art of preparing and preſerving the different parts of the human body, and of quadrupeds, including a treatiſe on modelling from the dead and living ſubject, illuſtrated with a variety of copper plates. A work hitherto much wanted in the ſchools of anatomy, and upon which ſubjects nothing comprehenſive nor ſyſtematic had been before publiſhed.

† *Vide* Denman's collection of engravings.

 ſituations.

ſituations. And for this inſtance of friendſhip I preſented him with the preparation, to add to his valuable and curious collection. In the preſence of the before-mentioned gentlemen I proceeded to a ſecond expoſure of the abdomen, and, upon re-examination, the parts were found exactly to agree with the former deſcription, both in reſpect to ſituation and connexion. On removing the contents of the cavity of the pelvis, the tumour which, on the firſt examination, was thought to be the uterus, by further inſpection was found to be that cellular ſubſtance of which I have had repeated occaſion to take notice.

The uterus was ſituated in the long axis of the ſuperior aperture of the pelvis, immediately under, and covered by the tumour, with its fundus directed obliquely downwards to the ſacro-ſciatic ligaments, the os tincæ was raiſed towards the left ſide; the uterus laying acroſs the pelvis in ſuch a direction, that the left ſide of its body occupied the natural ſeat of the fundus, and was of its uſual unimpregnated ſize. On making an opening into its cavity ſome days after, in the preſence of Drs. Garthſhore, Lowther,

Bailie,

Bailie, and Coombe, and Mr. Cline, Haighton, Pole, Cowper, &c. no tunica decidua could be diſcovered. The verge of the os tincæ was rather fuller and larger than common, although it was agreed by every one preſent not morbidly. The ovaria on both ſides were very diſtinct, and the right one was puſhed down conſiderably into the cavity of the pelvis by the obliquity of the uterus. The corpus luteum was found in the left ovarium, which, together with the fallopian tube of the ſame ſide, took a poſterior direction along the ſurface of the tumour, to which they had but a very ſlight attachment.

OBSERVATIONS.

Having given as clear and accurate a relation of the hiſtory of the ſymptoms, as could be collected from the gentlemen who attended, together with the appearances on diſſection, I ſhall beg leave to add a few remarks, and point out thoſe phænomena that may aſſiſt in forming ſome diſtinguiſhing criteria to aſcertain the uterine from extra uterine geſtation.

The

The appearances on diſſection furniſh us with clear conceptions of the ſufferings of the poor woman during her tedious and painful pregnancy. Some portions of the inteſtines being puſhed down, and others preſſed in different directions, account for thoſe violent pains which attacked her bowels during the firſt ſtages of geſtation, and which gradually affected the ſtomach, and produced the ſenſation of ſomething continually puſhing up that viſcus, and likewiſe ſatisfactorily account for the alternate diarrhœas, and obſtinate conſtipations, accompanied with violent and almoſt conſtant vomitings, of which ſhe ſo often complained.

The diſtended and inflated ſtate of the inteſtines, with general compreſſion of the viſcera, gradually increaſing to a great degree, on parts ſo extremely ſenſible, and poſſeſſed of excited irritability, nothing leſs was to be expected than a derangement of their œconomy, and a perverſion of their natural functions.

The hæmorrhagy from the uterus, which occurred in the eighth, and continued until the ninth month of her pregnancy, and alſo that organ being ſo much enlarged, and the

os tincæ ſo greatly dilated as to admit the introduction of three fingers, are circumſtances in this, as well as in every other ſpecies of extra uterine impregnations, that may be regarded as uncommon. For, admitting it to be the generally received opinion, that the uterus, in thoſe caſes, ſuffers an enlargement nearly in the ſame proportion as if the fœtus and involucra were contained within it, yet commonly the os internum remains as cloſe and contracted as in the unimpregnated ſtate *.

The increaſed bulk of the uterus from direct communication and the natural ſympathy of parts may therefore be expected in ovarian and tubal caſes, but not ſo much in the ventral conception, although it happened in this inſtance. Since in the latter there

* There are ſeveral inſtances of this increaſed ſize of the uterus, without its containing the ovum, ariſing from the additional quantity of fluids tranſmitted to it. In the ovarian caſe at the Middleſex Hoſpital, the uterus was conſiderably enlarged. Boehmerus, in his Obſervat. Anatom. Rarior. was the firſt (and not Dr. Wm. Hunter, as has been erroneouſly conceived) who obſerved that although the fœtus be extra uterine, yet the cavity of the uterus ſuffers thoſe peculiar changes which render it fit for the reception of the ovum.

is no immediate connexion with the genital ſyſtem, nor alteration in the ſtructure of the womb to be expected, from a want of an immediate or particular connexion and natural ſympathy, ſimilar to the other caſes.

It has been obſerved that the colon, near the part where the fœtus was ſituated, had ſeveral ulcerated apertures.—Do not theſe ulcerations indicate that Nature was beginning a work for the removal of this extraneous body, and that the very operation to produce this effect (in which ſhe failed) was the cauſe of the woman's death?

This ſuggeſtion is further ſtrengthened by the conſiderable marks of inflammation that were apparent in the inteſtines and peritoneum. Had theſe ulcerations of the colon been ſubſequent to the diſſolution of the fœtus, Nature probably might have ſucceeded in her attempts, by removing the child piece meal through the medium of the rectum, or by abceſſes forming in the abdomen; and although this operation might have taken up for its accompliſhment a ſeries of years, yet, at laſt, ſhe might have ſurvived a complete evacuation of the fœtal parts.

Several

Several examples in illuſtration of this have been quoted in a former part of this hiſtory *; and many caſes recorded where the infant has burſt either from the ovaria, the fallopian tubès, or from ruptured uteri, has fallen into the cavity of the abdomen, and remained there for a number of years, being at laſt diſcharged by the inteſtines, or by abſceſſes.

The diſcoloured ſkin changing to a more natural and healthy appearance, the ſubſidence of the pain in the ſtomach and bowels, the return of ſtrength and appetite, and the diminiſhed volume of the abdomen, particularly the latter after the adminiſtration of mercury, incline us to believe, that there muſt have been a conſiderable quantity of fluid in the ſacculus, containing the child, which by theſe means had been abſorbed †. The collection of matter in the right breaſt, at the time of a ptyaliſm from the mercurial courſe, was ſubſequent to the formation of

* Vide Note, p. 180.

† While this circumſtance proves that water had exiſted within the bag, at the ſame time it evinces the eminent and well known powers which mercury poſſeſſes in producing abſorption, and exciting action in that ſyſtem of veſſels.

that

that purulent fluid which was discharged from the nipples of both breasts.

It were much to be wished that we could point out some leading criteria to enable us to distinguish accurately when the child is contained within the abdomen; although this is hardly to be expected from a single case, I shall mention what has occurred to me upon the diagnosis.

Notwithstanding there is supposed to be three different species of extra uterine conceptions, the symptoms and effects resulting from these are nearly similar to those which occur in ordinary pregnancy; hence it becomes a very difficult matter to distinguish between them; particularly before the fourth or fifth month, since the motions of the child are not commonly felt before these periods; afterward, it may be more readily discovered, especially if attended at the same time with symptoms which are not common in natural gestation.

We are informed by authors that, in conceptions of the ovaria and fallopian tubes, the menstrua are obstructed, but that in pure ventral cases they are not, but will rather appear at regular periods, as in the un-

impregnated ſtate; and alſo that in the latter the ſtomach is not affected with ſickneſs or vomiting, neither are the breaſts excited by the natural ſympathy to ſecrete milk; although in the former caſes, that fluid is generally ſecreted in the ſame proportion as in the uterine impregnation.

If fœtation occurs either in the ovaria, or in the fallopian tubes, I ſuſpect a part of the abdomen only will be tumefied, that which inclines towards the ileum rather than the hypogaſtric region, and the ſwelling in ſuch caſes is moſt to be depended upon in the early months of pregnancy, ſince at that time it is confined to one ſide, and cannot poſſibly extend to the other. But, in the more advanced ſtages, this is not ſo evident, becauſe of the ovaria and fallopian tubes being incapable of admitting of further dilatation after the fourth or ſixth month *, the parts conſequently give way to the bulk and preſſure of the infant, and it falls thence into the cavity of the abdomen, where it ſoon

* Inſtances are recorded where the fœtus has been contained in the ovaria and fallopian tubes, till the full period of geſtation. But theſe are extremely uncommon. Vide Haller, Le Roux obſervat; ſur les Partes de Sang & Baudoloque l'Art de Accouchment.

periſhes,

periſhes, and becomes hard or putrid. But if the child is formed and developed within the abdomen, the circumſcribed elevation will be chiefly confined to the umbilical, or to one of the hypochondriac regions, as in the foregoing caſe it was laying in the right. In this ſituation of the fœtus, it will naturally follow, that the mother will complain of pain, an unuſual weight, and general uneaſineſs throughout the whole abdomen.

Theſe ſymptoms may be expected to ſucceed when its offices are impeded and diſturbed by the preſence of a foreign body, whoſe motions will be more extenſive and leſs conſtrained than in ovarian and tubal caſes, where the ſituation of the child, on the contrary, is conſiderably more limited and confined; and we ſhall likewiſe be able to judge by its limbs and parts being more readily diſtinguiſhed through the abdominal covering. But the moſt certain diagnoſtic will be at the end of the period of natural geſtation, when pains appear without being felt at the bottom of the loins, or bearing towards the anus, and without regularity or duration; the os tincæ moſt probably remaining undilated, and the membranes not

preſenting

presenting with the absence of the other usual symptoms of labour.

After having discovered that the child is lying in the cavity of the abdomen, would it be more advisable to leave the work solely to Nature, or to attempt delivery by incision, and extracting the fœtus before Nature has made efforts to relieve herself? Instances may occur where the former plan will be preferable, and others, where the mother would have no chance of surviving without an operation. It would always be improper to attempt an operation of this consequence whilst there are no dangerous symptoms, since cases are recorded, where patients have continued in that situation from twenty to forty years, without suffering much pain or inconvenience. On the other hand, when the pain is excessive, the pressure and gravitation of the infant become grievous; a small, quick, irregular pulse, restlessness, other signs of great irritation, and jaundice, supervening, there can be no hopes of recovery without an operation, which certainly is calculated to give a chance to both mother and child. The disagreeable,

and too often fatal effects, attending the Cæsarian section *, and the dread of a profuse hæmorrhagy following the separation of the placenta from parts not capable of contracting, has intimidated those, who have met with extra uterine cases, from performing the operation †.

For performing the operation there is a period of necessity, and another of election; the first of these I have just been adverting to, as being obliged to have recourse to when the symptoms assume an alarming appearance, and the latter applies to that period where Nature makes some efforts for the expulsion of the fœtal parts by abscesses form-

* Although the Cæsarian section is a dangerous operation, and has not been accompanied with the same fortunate issue in Great Britain as upon the continent, still a simple incision through the parietes of the abdomen is by no means of such serious consequence as when we are obliged to make another into the substance of the uterus, and exposing a second cavity to the action of the atmospheric air. It is more than probable, that greater mischief is produced in these operations from the admission of this fluid than the mere division of parts.

† Dr. Clarke's case, which I have related, is an instance of the great danger of those hæmorrhages.

ing in the abdomen. Theſe laſt generally preſage favourable conſequences to an operation, which is not much more than an anticipation of that wound which would be formed by an abſceſs.

It may be argued againſt extracting the after-birth, that the danger is by no means equal to the riſk which the woman muſt be expoſed to if it is permitted to remain and to detach itſelf. Since death muſt neceſſarily follow from ſuppuration and gangrene taking place upon the ſpontaneous ſeparation, therefore its extraction along with the child ought always to be attempted. On the contrary, my firm opinion is, that the ſeparation and expulſion of the placenta ſhould always be left to Nature, for the extraction will be generally fatal from the hæmorrhagy following it, beſides the firm and extenſive adheſion which it frequently forms with a part, or the whole of the viſceral contents (as happened in the caſe of Mrs. Calvert, where it adhered univerſally to the abdomen and almoſt every contained viſcus), would render its removal totally impracticable to the operator, and highly dangerous to the patient.

When it is found neceſſary to have recourſe to the operation, I ſhould propoſe it to be performed after the following manner: viz. a longitudinal inciſion ſhould be made in the direction of the abdominal tumor, beginning ſuperiorly at the moſt prominent part, and not continuing it far until the ſituation of the child be diſcovered; becauſe, as has occurred in the preſent caſe, the head may immediately preſent, and the child be readily extracted without a very large inciſion. It is hardly neceſſary to obſerve, that we would always divide the lateral or the muſcular, in preference to the middle or tendinous part, of the abdominal covering. After having made a ſufficient aperture, the child ſhould be removed by ſlow and cautious means, afterwards dividing and tying the umbilical cord as in a natural labour, and leaving the maternal part of it hanging out of the wound, which may be daily pulled at, in a gentle manner, until the placenta ſhall be gradually ſeparated, by which means the external wound will be prevented from healing until the time that the placenta, or every detached portion of it,

it, can be removed *, and which alſo will afford an opportunity of uſing emollient and other injections, as relaxants, and to keep the cavity free from putrid and other extraneous matter.

Thus, while I have endeavoured to lay before you the hiſtory of this uncommon caſe, I am not inſenſible of the many inaccuracies with which it in every page abounds, yet I truſt that ſame liberal conduct, that ſame candid diſpoſition, which have always

* I have not as yet experienced any miſchief from allowing the placenta to remain in uterine caſes; but I have often been a witneſs to much injury being done, in precipitating its expulſion by the raſh introduction of the hand for the purpoſe of tearing and extracting this ſubſtance from the extremely tender and irritable interior ſurface of the uterus. It is a ſtanding and invariable rule with me, and a wiſh I expreſſed to the midwives employed in the EASTERN DISPENSARY, that they ſhould uſe the gentleſt efforts in delivering the after-birth; if theſe did not ſucceed, to leave its ſeparation to nature. And in the courſe of the four years I have been ſurgeon to that inſtitution there has not been a leſs number than 1500 women delivered, and I can honeſty declare, during that period, neither in private nor public practice have I experienced any inconvenience from its retention; although in ſome inſtances it has been retained three, four, or even five days, before it has entirely been expelled.

in an eminent degree actuated the minds of those Gentlemen who compose the Medical Society of London, will now operate in framing an apology for these deficiences, and accept it as a mark of esteem, and as a recital of facts authenticated by many of its members, and others of the first professional reputation *.

* Doctors Lettsome, James Sims, Saunders, Osborne, and Marshall, Messrs. Hunter, Cruikshanks, Blizard, &c.

ARTICLE

ARTICLE XIV.

On the Submerſion of Animals; its Effects on the Vital Organs; and the moſt probable Method of removing them.

By CHARLES KITE,

Member of the Corporation of Surgeons in London, Correſponding Member of the London Medical Society, and Surgeon at Graveſend in Kent.

Read JANUARY 10, 1790.

To improve the means of recovering perſons apparently dead, a very particular and minute attention to the real ſtate of the vital parts, after reſpiration has been ſuſpended, ſeems neceſſary.

Much has already been ſaid on this very intereſting ſubject, but authors (even thoſe who have written the moſt recently concerning it) differ ſo materially in their opinions, that

that it is by no means eaſy to diſcriminate which may be preferable. The point therefore is not ſo perfectly and ſatisfactorily decided, or the ſubject ſo completely underſtood, as to preclude farther inveſtigation.

Under theſe circumſtances I venture to addreſs the Society; my inducement for requeſting their attention is a perſuaſion that it may be poſſible to throw conſiderable light on the ſubject by noticing ſome things not yet ſufficiently adverted to, and placing others in a clearer point of view than has hitherto been done.

How far I have ſucceeded I leave to their judgment, whoſe opinion will be held univerſally deciſive; but even if I fail in eſtabliſhing what appears evident to me, I ſhall at all times have the ſatisfaction of knowing that my remarks will meet from them a candid reception.

It is unneceſſary to prove, what ſcarce any one at this time doubts, that the ſuſpenſion or abolition of life in drowned animals, is effected entirely by the operation of the water upon the lungs: I ſhall therefore proceed to enquire into the manner in which it operates ſo as to produce that effect.

The

The only manner in which it appears to me poſſible, in theſe caſes, for the water to operate, is either by entering the trachea, or by ſuſpending the action of reſpiration.

In the experiments which I made ſome time ſince, and have again lately repeated, in order to determine this point, I have never been able to detect more than a very ſmall quantity of the coloured liquor in which the animal was ſubmerſed, if examined when the animal had been only a ſhort time under water; and commonly no appearance whatever of the liquor was to be diſcovered in the lungs.

But from the experiments of others, of very conſiderable reſpectability, particularly thoſe of M. Louis, Dr. D'Haen, and Dr. Goodwyn, it appears that the liquor has ſometimes been found in greater abundance. It muſt, however, be mentioned, that even with thoſe gentlemen this was not a conſtant occurrence; it therefore ſtill continues a queſtion, how death was occaſioned in the other inſtances.

Dr. Goodwyn has very much elucidated this part of the ſubject by a very ingenious and well conceived experiment: he firſt immerſed a cat in quickſilver, and, on opening the

the body, found half an ounce of quickſilver in the lungs *, and an ounce of frothy fluid: having by theſe means found the quantity of fluid in the lungs of one drowned animal, he endeavoured to determine what effect the ſame, or a greater quantity of water, would have when introduced into the lungs of a ſimilar animal: two ounces of water, therefore, were introduced into the trachea of another cat. It had immediately a difficulty of breathing, and a feeble pulſe; but theſe ſymptoms were ſoon abated, and it lived ſeveral hours afterwards without much inconvenience. It was at length ſtrangled, and two ounces and a half of water found in the lungs.

From what has been obſerved it appears, that although water may ſometimes enter the lungs of drowned animals, yet

* This experiment was performed eight times, but in three inſtances out of that number no quickſilver was found in the lungs; now it is extremely probable that quickſilver would, on account of its greater ſpecific gravity, be found in the lungs when water would not; which is a farther preſumption that water is not often taken in, and never but in a very ſmall quantity; for the quantity of water, equal to the bulk of half an ounce of quickſilver, is only ſeventeen grains.

not

not in a ſufficient degree to occaſion their death *.

It is evident, therefore, that the death of drowned animals is to be attributed entirely *to the water intercepting the action of reſpiration.*

* The uncertain occurrence of water in the lungs of animals that have long been in the water, may be thus accounted for: It appears to me that all animals in dying, and particularly in the act of drowning, make as perfect and complete an expiration of all the air in their lungs as they poſſibly can; in animals who die otherwiſe than by drowning, the diaphragm and intercoſtal muſcles will contract to their natural ſtate, as all the other muſcles of the body do, after death has apparently taken place, and then the external air will neceſſarily ruſh in: but animals confined in water are under different circumſtances; for if, after this complete expiration, the muſcles are contracted, water inſtead of air will get into the lungs. I have, however, in another place ſhewn that water will not, at leaſt in any quantity equal to the air diſplaced, enter the lungs, till the irritability of the parts about the glottis has entirely ceaſed, the opening into the lungs then becoming free: if the muſcles concerned in reſpiration are ſtiff and rigid, that is, if they have really loſt the vital principle, the veſicles of the lungs being firmly compreſſed, will admit ſcarcely any water; but if the muſcles of the epiglottis loſe their power before the reſpiratory muſcles become fixed, the cavity of the thorax will be enlarged, and, in proportion as it is enlarged, water muſt neceſſarily enter into the lungs.

In

In this opinion I believe all parties are now very well agreed, but they differ extremely reſpecting the manner in which this ſuſpended action operates.

Reſpiration being an indiſpenſable requiſite for the ſupport of life in the more perfect animals, any material impediment to it occaſions death. The ſtoppage of reſpiration acts powerfully on the ſyſtem in two ways at the ſame time: i. e. if the lungs are quite empty of air, the chemical action of the air on the blood immediately ceaſes; and the blood is alſo prevented from paſſing through the lungs. If reſpiration be ſtopped at the end of a common expiration, both theſe circumſtances may continue a ſhort time, as there will be an hundred cubic inches of air in the lungs, in which quantity, it is ſaid, there are about thirty cubic inches of pure air, which is ſufficient to carry on the requiſite change for a few ſeconds; with theſe hundred cubic inches of air in the lungs they muſt be conſidered as in a middle ſtate of dilatation, and will conſequently allow the circulation to be continued through them for a ſhort time likewiſe. If a larger quan-

tity

tity of air be in the lungs, the chemical action may ſubſiſt for a longer time, and the blood veſſels, being more enlarged, will allow the circulation to be longer carried on through them. But, in every ſtate of the lungs, the two circumſtances muſt be equal and reciprocal, that the chemical and mechanical action may continue together.

From this view of the ſubject it cannot be a matter of ſurpriſe, that writers ſhould have differed as to which of theſe circumſtances occaſions death; without, therefore, adverting to all the other opinions on this ſubject, of which I have already treated ſufficiently in another place, I ſhall confine myſelf to the conſideration of two queſtions, the proper explanation of which will, I conceive, exhibit this intricate ſubject in ſuch a point of view as may enable us to determine, with ſome degree of certainty, the preciſe circumſtance to which the ultimate effect ſhould be imputed.

The queſtions, by which I conceive this determination will be moſt clearly eſtabliſhed, are, Whether the ſuſpenſion of the action of reſpiration induces a ſtoppage of the circulation and its neceſſary conſequences—*chemically,*

mically, by depriving the blood of certain properties which it ſhould acquire from the air in its paſſage through the pulmonary veſſels—or *mechanically*, by obſtructing the paſſage of the blood through the lungs.

The arguments that are brought to ſupport the former, I ſhall endeavour to ſtate with all the accuracy in my power.

Atmoſpheric air is ſaid to be compoſed of phlogiſticated, dephlogiſticated, and fixed air, in the proportion of nearly two thirds of the firſt, one third of the ſecond, and a very ſmall quantity of fixed air. When this air is reſpired, it is found to have undergone a change in the proportion of its conſtituent parts, the dephlogiſticated air being diminiſhed, the fixed air increaſed. As theſe changes are conſtant and uniform, they muſt be connected with ſome correſponding changes in the blood that circulates through the lungs.

By repeating the experiment of Veſalius it was found that the blood in the trunks of the pulmonary artery was black, but in thoſe of the pulmonary veins, florid; this change of colour therefore is produced by the chemical action of the air, and the

 dephlogiſticated

dephlogiſticated portion is found to be that which produces the effect.

When the dephlogiſticated air is diminiſhed, the blood paſſing through the lungs does not undergo the change of colour, and the ſymptoms which follow obſtructed reſpiration are to be attributed to this particular quality of the blood; it having been obſerved that when the blood which paſſed into the left auricle was florid, the auricle and ventricle contracted ſtrongly, but when the blood began to put on a ſhade of brown the contractions were diminiſhed, and when it was black they ceaſed, although the auricle was diſtended with blood, and as the contractions ceaſed, the functions of the body were ſuſpended; but as ſoon as the florid colour began to be reſtored, the auricle and ventricle reſumed their contractions, and all the other functions returned.

Applying theſe principles to animals in a ſtate of ſubmerſion, it is ſaid that the dephlogiſticated air, which the animal has in its lungs, is gradually conſumed, and conſequently that the blood paſſing through the pulmonary veſſels receives leſs and leſs of its florid colour, and the contractions of the heart

heart become proportionally ſlower until they ceaſe entirely, becauſe the blood which paſſes into its cavities is an inſufficient ſtimulus.

The blood in the pulmonary vein, the left ſinus venoſus, left auricle, ventricle, and arterial ſyſtem, is therefore of a black colour, and is an inſufficient ſtimulus for exciting the action of the parts that contain it; on account of this defect of ſtimulus the left ſinus venoſus and auricle receive it into their cavity and remain at reſt. As ſoon as they ceaſe to contract all the intellectual operations ceaſe, ſenſation and voluntary motion are ſuſpended, and the external ſigns of life diſappear.

Dr. Goodwyn, aware that the concluſion may "at firſt appear ſingular," that the ſame black blood which is a ſufficient ſtimulus for the *right* ſide of the heart, ſhould be inſufficient to excite the *left*, endeavours to obviate the objection that will naturally occur againſt this theory.

He obſerves, "that the two ſides of the heart do not exactly reſemble each other in all their qualities, there being a conſiderable difference between them, both in reſpect to the

the quantity of mufcular fibre and the facility of being excited to contraction."

The conclufion does indeed appear fingular *at firft*, for the reafon fpecified; and, notwithftanding what is faid in its favour, I apprehend it will alfo appear fingular *at laft*.

There certainly is a confiderable difference in refpect to the quantity of mufcular fibre in the two ventricles, and for a very evident reafon:—the right ventricle has only to propel the blood through the lungs, whilft the left muft (with a much greater force) drive it over the whole body.

That there is a difference between them in refpect to the facility of being excited to contraction, I am willing to allow, under certain reftrictions; for, fo far as my obfervations have extended, the greater facility of contraction does not depend on any peculiarity in the fibres of the right fide of the heart, but on the greater degree of ftimulus which is conftantly in animals under the prefent circumftance applied to that fide of the heart; for when, by any means, the quantity of blood in the two fides has been brought to an equality, the irritability or excitability has been nearly equal; and many

 inftances

inſtances have occurred to me where the contractions of the left ſide have been ſtronger, and continued longer, than thoſe of the right.

It is alſo added, " that there are ſeveral examples in the animal body where muſcles of a ſimilar ſtructure are not excited by the ſame or ſimilar power; ſome are thrown into contraction by the will, ſome by particular conceptions of the mind, and ſome b ychemical ſtimuli: yet none of theſe different powers will produce a perfect contraction of thoſe muſcles to which they are not adapted by nature."

But this is a vague argument. The heart being a muſcle of a very peculiar nature, and its offices no leſs remarkable, it reſembles no other muſcle in its contraction, or in the direction of its fibres; whilſt all other muſcles have ſome conſiderable affinity to each other, both with reſpect to the nature and direction of their fibres:—neither is there any muſcle, viſcus, or other part in the whole body, whoſe function bears any ſort of reſemblance to the heart, or that has the ſame, or even a ſimilar, power to excite it to contraction,

contraction, or to the performance of its office.

These arguments therefore will, I apprehend, be deemed a very indecisive answer to the objection, that the blood which is sufficient to excite the action of one side of the heart should be insufficient to excite the action of the other.

The next circumstance deserving of notice is, that the left side of the heart *ceases to contract* as soon as the blood in its cavities becomes *black*, and that the cessation of the intellectual operations of sensation, voluntary motion, and the external signs of life, *arises from this stoppage of the motion of the left side of the heart.*

Did the inaction of the heart depend upon this black colour, or phlogisticated state, of the pulmonary blood, it is evident that, as soon as the blood passing through the pulmonary vein has acquired in a great degree this colour, the left sinus venosus, auricle, and ventricle, would *immediately cease their action, and that this action could not be renewed* in any degree so long as the blood in those cavities continued in the *same state*, that is,

ſo long as it was kept from the influence of freſh air.

If this therefore be the caſe, it is evident that when we open the cheſt of any animal, as ſoon as the uſual external ſigns of life diſappear we ſhall not perceive any motion in either the left auricle or ventricle.

To aſcertain this circumſtance, I drowned an animal under a glaſs receiver filled with, and inverted into a veſſel of, water: as ſoon as its ſtrugglings ceaſed, and it appeared to be dead, it was removed from the water, and the heart and lungs expoſed to view.

Both auricles and both ventricles were found contracting and dilating with conſiderable ſtrength and regularity: the right auricle and right ventricle contracted for thirty minutes; whereas the left auricle and left ventricle continued to contract for one hour and a quarter, after every external ſign of life had diſappeared *.

* The blood in the left ſide of the heart was as black, immediately after the animal appeared dead, and while the contractions of the heart ſubſiſted, as it was two or three hours after, when all motion of the heart had ceaſed; it cannot with any propriety therefore be ſaid that the heart's motion ceaſed in conſequence of the blood's having acquired a higher degree of phlogiſtication.

 The

The ſame experiment was repeated on eleven other animals. The event of theſe experiments was not exactly the ſame:—in ſome the contractions continued longer, in ſome a ſhorter time; and an inſtance or two occurred where no motion whatever in either ſide of the heart could be obſerved. This difference does not at all however interfere with the general event, for the average length of time, in five caſes wherein the left auricle contracted after the animal appeared dead, was one hour and twenty-eight minutes; and in the left ventricle, forty-eight minutes *.

Conceiving

* I take this opportunity of mentioning that, on account of the difficulty, indeed the abſolute impoſſibility, of procuring other ſubjects, my experiments were chiefly made on young animals, ſuch as kittens and puppies; what therefore is ſaid in this place, and indeed in every other part of this paper, is to be conſidered as referring to appearances obſerved in thoſe animals. I have not been able to remark any difference of the leaſt conſequence in the length of time required to drown a kitten and a puppy; nor could I obſerve any difference in the continuance of their convulſive motions, in the contractions of their hearts, or in the irritability of theſe or of any other parts of their bodies: obſervations therefore made on one claſs of theſe animals refer with ſtrict propriety to the other claſs alſo.

Conceiving it poſſible that the air might have ſome effect on the external parts of the heart, ſo as to continue its motion longer than natural, I varied the experiments in ſuch a manner, that it did not appear poſſible the air could produce any ſuch effect.

With this view, after drowning the animals in the uſual manner, and opening the cheſt, the pericardium was ſuffered to remain upon the heart, ſo that the air could not come in contact with its external ſurface: but the heart, in all the inſtances, contracted as uſual.

More effectually to exclude the contact of the air, ſome animals were drowned in cold, and others in moderately warm water: the thorax was then opened, and the ſternum removed, while the animal remained under water; but in every inſtance the heart was found contracting, and it continued to con-

alſo. I have not yet aſcertained whether the appearances between the full grown animals correſpond ſo exactly, although I have reaſon to believe they do; but I am certain there is a difference between the appearances attending the deaths of young and of old animals, and it is a circumſtance that ought to be particularly adverted to.

tract,

tract, ſome time after the animal appeared dead.

Recollecting that Dr. Prieſtley had related, that the colour of the blood was capable of being ſoon affected through a moiſt bladder, and having often remarked the familiar appearance which preſents itſelf in bleeding, where the blood is changed from its uſual dark brown to a bright florid colour, conſiderably below the ſurface of the coagulum, although this was covered with the ſerum, I thought the continuance of the contraction might, in the preſent inſtances, be attributed to ſome ſuch circumſtances: I attempted therefore to find out whether the heart would contract when the animal was covered with a fluid, through which I found the air could not produce any alteration in the colour of the blood.

After various devices, I found that oil was extremely well calculated to anſwer this purpoſe; for, on receiving ſome dark venal blood in a wide mouthed glaſs veſſel, and immediately covering it with a very thin coat of oil, not the leaſt alteration was perceived in the colour of the blood, although the oil was expoſed ſeveral days to the influ-

ence of the air: a kitten was therefore immersed in a veſſel of ſweet oil, of the temperature of $67\frac{1}{2}^{d}$. nine minutes after immerſion it was opened while it was entirely covered with the oil; both auricles and both ventricles were found contracting very forcibly, fifty-one ſtrokes in a minute, and continued to do ſo about three quarters of an hour, but ſome degree of motion was perceivable upwards of two hours after *.

From the events of theſe experiments we may conclude, therefore,

That the left ſinus venoſus, auricle, and ventricle, do not ceaſe to contract in conſequence of the phlogiſticated ſtate of the blood in their cavities:

That the intellectual operations do not ceaſe—that ſenſation and voluntary motion are not

* The motion here alluded to was conſiderable, although by no means ſo ſtrong as at firſt; but is was ſeveral hours before it ceaſed entirely. In looking over the notes of my experiments, I find that in ſome animals, both cats and dogs, that were drowned in the uſual manner, and opened after their deaths, ſome motion was perceivable in the heart after a very conſiderable length of time; i. e. ſix, eight, ten, and twelve hours; and in one or two inſtances, where particular attention was paid, its motion did not entirely ceaſe for almoſt twenty hours.

ſuſpended

ſuſpended—and that the external ſigns of life do not diſappear in conſequence of the ſinus and auricle ceaſing to contract: for, in the generality of inſtances, the ſinus, auricle, and ventricle, continue to contract with a conſiderable degree of force for ſome time after the blood has acquired its black colour and appears fully ſaturated with phlogiſton, and for ſome time after the external ſigns of life have diſappeared.

Dr. Goodwyn infers from this theory, that the only conditions of the body requiſite for the recovery of drowned animals are, that the blood be of a florid colour in the left ſide of the heart, and that that ſide of the heart retain the faculty of contraction.

Several inſtances are mentioned where the blood in the left auricle and ventricle was, by imitating natural reſpiration, very ſoon changed from a black to a florid colour; and many experiments which I have juſt related prove, that the heart has not only the faculty of contraction, but abſolutely a ſtrong and natural action commonly for a conſiderable length of time after the animal has appeared dead: upon this principle therefore

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it would be very eaſy to recover animals, ſo long at leaſt as the heart continues to contract, without the application of any ſtimulus, either internal or external, other than that which uſually excites its action.

I have ſaid that the average length of time during which the left auricle continued to contract ſpontaneouſly, and with a tolerable degree of force, in five inſtances, was nearly one hour and a half; conſequently, if the colour of the blood is changed at any time within that period, which may, according to Dr. Goodwyn, readily be done, the animal ought to recover: but will any man venture to ſay he can recover an animal whoſe reſpiration has been ſuſpended one quarter of that time*?

* The hearts of many animals continue the capacity of contracting, if kept in a mild atmoſphere, even ſo long as twenty-four hours, after the appearance of death has taken place, upon the application of various ſtimuli to their external ſurface, ſuch as gentle preſſure, pricking with a knife, a drop of any of the mineral acids, the cauſtic alkali, an hot iron; and ſometimes much longer by means of an electrical ſhock: ſo that I am not ſure, if we adopt this theory, whether we muſt not give credit to thoſe extraordinary inſtances of recovery which have long been deemed fabulous.

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We are told that the pulmonary veins, ſinus venoſus, left auricle, left ventricle, and the trunks and ſmaller branches of the arteries proceeding from the left ventricle, contain a quantity of this black blood, which is ſaid to be an *inſufficient ſtimulus* to excite the contraction of the heart: it is not allowed that this blood is poſſeſſed of any noxious power, becauſe " if it diminiſhed or deſtroyed the faculty of contraction, the heart would not contract again when thoſe means are applied which are neceſſary to produce the contractions:"—no experiments however are offered in ſupport of this poſition, and the reaſon has not even plauſibility to recommend it, for ſurely no one can deny but the faculty of contraction may be materially diminiſhed, and yet it may contract again " when thoſe means are applied which are neceſſary to produce the contraction;" for any thing that appears to the contrary, therefore, the blood may juſt as readily exert a *noxious* or *ſedative* power as be an *inſufficient ſtimulus*.

In which ever point of view this affair of black blood is regarded, it ſhould ſeem that all the parts of the body in which this blood

blood is present are equally liable to languish under the same defect—the brain, the source and origin of all the senses—the chylopoietic and abdominal viscera—the muscular system &c.: in short, the animal and natural functions must cease, as well as the vital, for want of the salutary action of the florid blood; and how is it possible that all these organs can again acquire their power of action, by altering the property of the blood in the pulmonary artery, and perhaps likewise in the pulmonary veins?

But supposing for one moment, and for argument's sake, what is very difficult to conceive, that this alteration does take place; yet it must be evident to every one, at first sight, that it is impossible the change can take place till inflation of the lungs has produced it: now, of the great number of recoveries mentioned in the reports of the Humane Society, how very few are the cases where artificial respiration was used at all; and many instances must have been seen, by every one used to make experiments of this kind on animals, that they often recover without any assistance whatever:—how the blood in the lungs, heart, brain, &c. has in these cases undergone the

necessary

neceſſary change I am unable to comprehend!

The author of this theory ſays, " no one can deny that the reſpiration is ſometimes eſtabliſhed in this ſtate, in conſequence of the application of heat:" but if the cauſe of the animal's ſtate of apparent death is, as we are taught to believe, black or phlogiſticated blood in the left ſide of the heart, what effect can *heat*, or any thing elſe, air excepted, have in changing its property? A proper degree of heat may increaſe the irritability of the fibres, and by ſuch means the diſpoſition for action in the fibres of the heart will be increaſed, but nothing further: action itſelf cannot take place till the blood has received its ſtimulating property, and till its colour is altered; which changes cannot take place without the repeated application of freſh air.

Mr. Hunter, in his paper on the recovery of perſons apparently drowned, publiſhed ſeveral years ſince, notices a theory very ſimilar to that adopted by Dr. Goodwyn; he ſays, " the loſs of life in drowned perſons has been accounted for, by ſuppoſing that the blood rendered unfit, by want of the action

tion of the air in reſpiration, is ſent in that vitiated ſtate to the brain and other vital parts, by which means the nerves loſe their effect on the heart, and the heart in conſequence its motion:" this however, he continues, "I am fully convinced is falſe; firſt, from the experiments on the dog, in whoſe caſe a larger column of bad blood, viz. all that was contained in the heart and pulmonary veins, was puſhed forward without any ill effect being produced (Animal Oeconomy, page 118); and next, from the recovery of drowned perſons and ſtill-born children, which under ſuch circumſtances never could happen unleſs a change of the blood could take place in the brain prior to the reſtoration of the heart's motion: therefore the heart's motion muſt depend immediately upon the application of ſuch air to the lungs, and not upon the effects which air has upon the blood, and which the blood has upon the vital parts."

As this objection was oppoſed to a theory ſo very ſimilar to that which is the ſubject of our preſent diſquiſition, ſeveral years I apprehend before Dr. Goodwyn attended to the

the ſubject, and by a perſon of the very firſt eminence and authority in our profeſſion, it was natural to conclude that Dr. Goodwyn would, at leaſt the ſecond time of publiſhing his book, pay particular attention to an objection that materially concerned his theory.

But if any notice whatever is taken of it, it is ſo very diſtantly and obſcurely as ſcarcely to be perceivable; and as neither arguments nor experiments are brought againſt this objection, it ſeemingly was found altogether unanſwerable.

It is ſaid that the diſeaſe under conſideration is in the blood, and conſiſts in the preſence of this black blood in the left ſide of the heart and arterial ſyſtem; and the ſubſequent appearances, ſuch as the diminution of the action of the heart and arteries, &c. are the conſequent ſymptoms.

Whatever ſhare the ſtate of the blood may have in cauſing death, it does not appear by any means certain that it is owing ſo entirely to its black colour as this and many other paſſages in the Doctor's performance would lead us to conclude, ſince caſes do not unfrequently occur where, in diſſection, black blood has

has been found in the left ſide of the heart and arterial ſyſtem, notwithſtanding the perſon ſuffered a very different kind of death, and where lividneſs of the lips, face, and other parts of the body, to a conſiderable degree, was found in patients under circumſtances ſeemingly not any way connected with a ſtate of ſuſpended reſpiration.

In proof of the former part of this aſſertion I might here relate many inſtances which have occurred to my own obſervation; but ſuch inſtances are ſo generally known, and ſo many are to be found in almoſt every book of anatomical collections, that I will only refer to thoſe related by Morgagni, of perſons dying in conſequence of *apoplexy* (which apoplexy was evidently induced either by extravaſation or great diſtention), where the face, lips, and neck, were of a *blue* or *livid colour*, and where on diſſection the blood in the different cavities of the heart was *black*.

I lately had two caſes under my care, and every man of moderate practice muſt have ſeen others, where the patients being ſuddenly and unexpectedly attacked with violent apoplexies, an hour or two before death the face and neck became very livid, and juſt before

before that event took place almoſt entirely black: in theſe caſes the reſpiration was, as it always is under ſimilar circumſtances, long and laborious; but there was no obſtruction to the paſſage of the air into and out of the lungs; and as, probably, there was ten times the quantity of air taken into and expelled from the lungs than would be in common reſpiration, the blood paſſing through the pulmonary veſſels muſt have been expoſed to the influence of a greater quantity of air than when the perſon was in health.

I am acquainted with a young lady of a healthy, but very delicate conſtitution, ſubject to no complaint but what occaſionally ariſes from a weak ſtomach, who obſerved, the beginning of the winter before laſt, that ſhe was more than uſually affected by the cold; as the winter advanced the inconvenience increaſed; and it was ſoon obſerved, that when ſhe expoſed herſelf to any moderate degree of cold, either in the houſe or whilſt in exerciſe in the open air, for a very few minutes, it had a viſible effect on the colour of her face; the cheeks and noſe became red, the redneſs would increaſe, and, if ſhe continued expoſed any conſiderable length of time, it became

quite of a blue colour. The intenſity of the colour began to abate as ſoon as ſhe became in the leaſt warm, and when ſhe was ſufficiently ſo, it entirely diſappeared, and her complexion recovered its uſual appearance. From that time to the preſent ſhe ſuffers the ſame inconvenience whenever ſhe expoſes herſelf to the cold, and it goes off as ſoon as ſhe becomes warm: it is for obvious reaſons more frequent in winter; but if in the ſummer-time ſhe finds it at all cool, the ſame appearance readily takes place.

This lady was about twenty years old when this occaſional change of colour was firſt obſerved, and it came on without any aſſignable reaſon whatever. Her ſtate of health, particularly as to reſpiration, does not vary either before, at the time of its appearance, or after it has ſubſided; and the only inconvenience ſhe perceives, is from the ſenſation of cold, and a kind of pricking in the parts affected.

Can the black colour of this blood be occaſioned by the want of the action of the air in reſpiration? If it can, I would gladly know in what manner its action is precluded.

Dr.

Dr. Crawford has obſerved, in his elaborate treatiſe on animal heat, that the venal blood of animals, which has been kept for ſome time in a warm medium, approaches in its colour very nearly to that of arterial blood; and that the arterial blood of animals kept in a cold medium, becomes darker than uſual. I have been informed that Dr. Crawford confined an animal in a cold medium at about 28°, and allowed him to inſpire but a ſmall quantity of air; arterial blood drawn from this animal, although he was perfectly alive and well, was equally dark coloured as the blood found in the left ſide of the heart of an animal that was drowned; ſo that the ſame coloured blood killed one animal, although it ſuffered another of the ſame ſpecies to live very well.

From theſe caſes and experiments it is evident,

1. That in the inſtances mentioned, and in many ſimilar to them, the black colour of the blood muſt depend on ſome other circumſtance beſide the want of the action of the air. And,

2. That the black blood *does* poſſeſs a

ſufficiently ſtimulating quality to excite the action of all parts of the heart.

From what has been ſaid, therefore, it appears,

1. That the left auricle and ventricle do not ceaſe to contract *in conſequence* of the black colour or phlogiſticated ſtate of the blood in their cavities; becauſe they really do contract, and with a conſiderable degree of force, for ſome time after the blood has acquired its black colour.

2. That the intellectual operations *do not ceaſe*; that ſenſation and voluntary motion *are not ſuſpended*; and that the external ſigns of life *do not diſappear in conſequence* of the ſinus and auricle ceaſing to contract, becauſe the ſinus and auricle continue to contract a conſiderable time after thoſe changes have taken place.

3. That it does not appear that the blood's being reſtored to a florid colour in the left ſide of the heart, and that ſide's retaining the faculty of contraction, are the only conditions requiſite for the recovery of drowned animals; becauſe animals do not in many inſtances recover when this colour of the blood is re-
ſtored,

ſtored, although the contraction of the heart continues.

4. If the black colour, or phlogiſticated ſtate of the arterial blood, is the cauſe of the death of drowned animals, it may juſt as readily exert a ſedative effect, as be an inſufficient ſtimulus; under either circumſtance, all the different viſcera in which this blood is preſent, appear liable to be affected by want of the ſalutary action of the florid blood as much as the left auricle and ventricle; and it does not appear, when their various functions are in this manner once ſuſpended, how they can be removed by altering the property of the blood in the pulmonary artery and pulmonary vein.

5. If the death of drowned animals be occaſioned by the black blood in the left auricle and ventricle, it would be impoſſible that any animal ſhould recover till the property of the blood is changed by inflating the lungs; the contrary of which is very generally known.

6. It does not appear that the death of drowned animals is occaſioned by "black blood in the left ſide of the heart and arterial ſyſtem," becauſe many inſtances have

occurred where the ſame appearances have been obſerved in perſons who have ſuffered a very different kind of death: where, in diſeaſes, the blood has appeared to poſſeſs an equal degree of blackneſs, accompanied with ſtrong action of the heart and arteries, and deep regular and uninterrupted reſpiration: and where, in a ſtate of health, the vital, natural, and animal functions have been continued, notwithſtanding there was a conſiderable alteration in the colour of the blood.

From the whole of theſe obſervations I draw the following concluſion.

That the ſuſpenſion of the action of reſpiration does not induce a ſtoppage of the circulation and its neceſſary conſequences, by chemically depriving the blood of certain properties which it ſhould acquire from the air in its paſſage through the lungs.

We now proceed to inquire, Whether the ſuſpenſion of reſpiration induces a ſtoppage of the circulation and its neceſſary conſequences, by mechanically obſtructing the paſſage of the blood through the lungs.

I find, by repeated experiments, that a perſon in health, and in a ſtate of perfect reſt, uſually

uſually reſpires about ſeventeen cubic inches of air; but, at the end of the expiration, there ſtill continues in the lungs eighty-ſeven cubic inches; and, at the end of each inſpiration, the lungs are capable of containing near two hundred additional inches. So that we may reckon, upon an average, that a moderate ſized perſon can take into, and expel from his lungs, three hundred cubic inches of air; the volume of the lungs therefore muſt be very materially different at the time of a full inſpiration from what it is at the time of complete expiration.

It is very well known, and I believe univerſally underſtood, that the capacity of the pulmonary blood-veſſels muſt be diminiſhed or enlarged in equal and exact proportion as the volume of the air-veſſels is diminiſhed or enlarged: conſequently, at the time of complete inſpiration, the capacity of the pulmonary artery and vein will be enlarged to the utmoſt extent, ſo that the blood will circulate with ſome degree of readineſs through them; and, at the time of complete expiration, their extremities in particular will be ſo much contracted as almoſt entirely to prevent the paſſage of any blood through them.

In ſupport of this, I beg leave to mention the following experiments.

A terrier puppy, about a week old, was placed under the receiver of the air pump, and the air directly exhauſted. Notwithſtanding the receiver was tolerably capacious, the animal's ſtrugglings ceaſed in exactly two minutes from the time the machine began to be worked.

After twenty minutes the air was let into the receiver, the cheſt was opened, and the heart and lungs expoſed to view. The right ſide of the heart and veins were enormouſly diſtended with blood; the left ſide was almoſt empty.

A puppy of the ſame litter was placed under a glaſs magazine of a condenſing machine, and as much air forced into it as could be done by means of a common hand condenſer. The reſtleſſneſs of the animal prevented my obſerving by the gage to what degree the air was condenſed; but by ſubſequent operations I have reaſon to believe, though I cannot be certain, that between three and four atmoſpheres were forced into the magazine; notwithſtanding this great degree of condenſation, the animal remained

in his confinement a quarter of an hour at a time without any material inconvenience. When the ſuper-abundant air was let out, the ſudden change ſeemed to have a momentary effect upon him, but in a few ſeconds he was as well as ever.

In the firſt experiment the air was ſo much rarefied, that the diaphragm, intercoſtal muſcles, and all the other muſcles concerned in the action of *inſpiration*, were inſufficient to counteract the expanſile property of the air; for the uſual equilibrium between the external air, and the air circulating in the fluids in a diſſolved or fixed ſtate, was deſtroyed; the conſequence of this muſt be, that as the preſſure of the external air was diminiſhed the fixed air of the fluids began to expand, and when the former was materially removed, the latter became detached and extricated from the maſs of fluids in equal proportion; hence the air in the veſicles of the lungs being exceedingly rarefied, the internal air muſt become expanded, the muſcles concerned in *inſpiration* could not act with ſufficient force to overcome theſe cauſes, the lungs were therefore neceſſarily forced into a ſtate of complete expiration,

piration, and but a ſmall quantity of blood paſſed to the left auricle of the heart.

In the ſecond experiment the external air acted with a very conſiderably increaſed force upon every part of the body that it could come in contact with; theſe were the ſurface of the body and the cavity of the lungs: upon the ſurface of the body this additional preſſure could effect no particular alteration; but the condenſation of the air being very conſiderable, the muſcles of *expiration* were not ſufficiently ſtrong to expel more than a ſmall quantity of air from the lungs, conſequently the lungs would be continued in a ſtate nearly approaching to that of complete inſpiration; under which circumſtances this experiment proves that the blood paſſes with ſufficient readineſs through the pulmonary veſſels.

To corroborate theſe experiments I endeavoured to produce a ſtate of complete inſpiration, and likewiſe a ſtate of complete expiration, in the following manner.

A proper pipe being affixed to an hand air-pump, was introduced into the trachea of a kitten, and the air immediately exhauſted from

from the lungs; the exhauſtion was continued until the animal ceaſed to ſtruggle, which was fifty ſeconds.

This experiment was repeated on another kitten with this difference, that as ſoon as the air was exhauſted the trachea was immediately hid, the ſtruggles ceaſed as in the laſt exactly in fifty ſeconds; in both caſes but a ſmall quantity of blood was found in the left auricle.

A proper pipe was inſerted into an opening made in the trachea of a kitten about a month old, and air was, by means of a common pair of bellows and flexible tube, continually forced into the lungs, ſo as to keep them as conſtantly as poſſible diſtended; the operation was continued one hour, at the end of which the animal did not appear any ways affected; the pipe was therefore removed, and he immediately appeared as lively as ever.

A proper pipe was fixed to a ſtrong bladder, which was filled with atmoſpheric air; the pipe was inſerted into an opening made in the trachea of a kitten about three weeks old, and properly ſecured there; a very ſtrong and uniform preſſure was then made

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on the bladder, ſo as to keep the lungs conſtantly and regularly diſtended: in this ſtate the animal continued ſtrongly alive eight minutes, its ſtrength then failed, and in four minutes more it loſt all the uſual ſigns of life; a ligature was then made on the trachea ſo as to continue the lungs in a ſtate of diſtention, and the pipe was withdrawn. It was opened; the motion of every part of the heart was uncommonly quick and ſtrong, by far more ſo than I had ever obſerved in any animal killed in any other manner; and ſome of the ſmaller arteries which were divided bled per ſaltim. There did not appear by any means that diſtention of the cava, or of the right auricle or ſinus, which is uſual in animals that are drowned, or when the air is exhauſted from their lungs. On opening the left auricle a larger quantity of blood was evacuated than I had ever obſerved before.

To perform this experiment with accuracy conſiderable attention is requiſite, or it will not always ſucceed; it was repeated ſeveral times, and at one in particular every precaution was taken againſt all interfering accidents. The ſubject was a kitten of the ſame

age

age and litter as that juſt mentioned. After introducing the pipe into the trachea, a very ſtrong, regular, and uniform preſſure was made on the bladder; the preſſure was ſo hard that I with difficulty could continue it fifteen minutes, my arms were then ſo tired I was obliged to remove the pipe; the animal directly turned itſelf about, reſpiration immediately commenced, and in a few minutes it perfectly recovered.

The pipe was introduced into an opening made in the trachea of another animal; as ſoon as the lungs were fully diſtended, a ligature was made on the trachea, and the pipe withdrawn. In two minutes and ten ſeconds the ſtruggles ceaſed; in fifteen more it was opened, and the right auricle was found to contain a ſomewhat ſmaller quantity of blood than the left. This experiment was repeated on an animal of exactly the ſame age, and the ſtruggling continued two minutes and forty ſeconds.

From theſe experiments it is evident,

That only a very ſmall quantity of blood can paſs through the lungs when they are in a ſtate of perfect expiration.

That the impediment to the paſſage of the blood through the lungs is materially leſſened by their being in a ſtate of full inſpiration. And

That the difference in the length of time which an animal will live with collapſed and diſtended lungs, is in the proportion of fifty to the former, and one hundred and thirty to the latter.

If the capacity of the pulmonary blood veſſels be enlarged to the utmoſt when the cells of the trachea are fully diſtended, it may be doubted what purpoſe the alternate motion of the lungs can anſwer, as in expiration the capacity is ſo much diminiſhed: to this it may be replied, that, independent of its being the moſt commodious method of bringing the air in contact with the blood that has ſerved its offices in the conſtitution, and thus producing a continual ſupply of freſh heat, it is extremely probable that the motion of the lungs is neceſſary to promote the circulation through them; for the quantity of blood that is to paſs through the lungs is enormouſly great, equal to that which paſſes through the whole arterial

ſyſtem

ſyſtem in the ſame ſpace of time, the impediment to its free circulation through the minute ramifications muſt therefore be conſiderable, even when the capacity of the veſſels is tolerably enlarged; hence ariſes the neceſſity of expiration, which, by reducing the capacity of the veſſels, preſſes the blood through the capillaries, and very much accelerates its paſſage into the left ſinus and auricle.

The idea is rendered more probable by obſerving that the degree of motion of the lungs is always in proportion to the quantity of blood circulating through them; for inſtance, when in a ſtate of perfect reſt, a perſon in health uſually occaſions but a ſmall alteration in the volume of the lungs, for he then reſpires about ſeventeen cubic inches: motion of the body quickens the circulation: the exertion of certain paſſions produces the ſame effect; and we all know by experience, that the motion of the lungs is increaſed likewiſe: if either one or the other is continued, or materially increaſed, the reſpiration is increaſed in proportion; and if the exertions are violent, we are then compelled to produce the greateſt motion in the lungs, by

by inſpiring as much air as they will contain.

The event of the following experiments ſeems alſo very much to corroborate this opinion.

I made a full inſpiration, and took three hundred cubic inches of air into my lungs; I retained it there as long as I was able, which was ſeventy-two ſeconds. On examining this air by the teſt of nitrous air, I found it 31,00 worſe than when I inſpired it.

I inſpired the ſame quantity of freſh atmoſpheric air, and by means of a proper contrivance breathed it into and out of a bladder as long as I could, which was one hundred and thirty ſeconds; on examining it in the ſame manner, it was 48,00 worſe than when inſpired.

A certain quantity of air, therefore, when the lungs are in motion, will continue the circulation of the blood through them almoſt twice as long as the ſame quantity will when they continue uniformly diſtended; the uneaſineſs and anxiety is the ſame in both experiments notwithſtanding the air which is breathed

breathed longeſt is 17,00 worſe than the other.

Having premiſed theſe obſervations, it will now be neceſſary to enquire in what ſtate and in what degree of diſtention the trachea of thoſe animals is found that are killed by drowning.

The diſtention of the trachea, and its ramifications, may be occaſioned by one of two circumſtances; by water inſpired into the trachea, or by air remaining in it.

If water is inſpired into the trachea, the coloured fluid in which the animal was drowned, will of courſe be found in it.

The general event of my experiments on this head I have before mentioned, and declared that very *little*, if *any*, occurred to my obſervation, if the examination was made ſoon after the animal appeared dead.

If air remains in the cells of the windpipe, the quantity may be nearly aſcertained, by preſſing the cheſt of the animal while its head is placed under a receiver filled with, and inverted into a veſſel of, water.

After an animal was drowned in the uſual manner, it was gently removed from the receiver in which it had been drowned, and

 its

its head placed under another receiver exactly filled with water; in this ſituation its cheſt was repeatedly preſſed, but not one particle of air eſcaped from the mouth.

In order to compreſs the lungs as effectually as poſſible, after drowning other animals, and placing them in the ſame ſituation as in the laſt experiment, the ſternum was removed, the lungs were conſequently ſurrounded with water; but, notwithſtanding there was the preſſure of fifteen inches of water on their ſurface, not the ſmalleſt portion of air was expelled into the receiver.

From hence we conclude,

That the lungs of drowned animals are in a ſtate of perfect and complete expiration:—and, conſequently,

That only a ſmall quantity of blood can paſs to the left ſinus and auricle.

If the ſtoppage of the circulation firſt takes place in the pulmonary artery, it follows that the blood returning from the various parts of the body, ſhould, in conſequence thereof, be accumulated in the right ventricle and auricle, in the ſinus venoſus, and in the great veins immediately connected with

with them. But is this found to be the caſe?

I ſpeak with moderation when I ſay, that the number of experiments which I have made on various drowned animals, principally to elucidate the nature of their deaths, has amounted to two hundred; and out of this number I can with truth aſſert, that not one inſtance occurred in which the venæ cavæ, right ſinus, and auricle, were not exceſſively and enormouſly diſtended with blood; but the accumulation did not at all times appear ſo conſiderable in the right ventricle*, although the pulmonary artery was

* Why the right ventricle is not ſo much diſtended as the right auricle, may be readily explained. The contraction of this ventricle, as I may ſhew in another place, continues longer than in any other part of the heart; its ſubſtance is likewiſe much ſtronger than that of the auricle, ſinus, and great veins: hence no ſooner is blood thrown into it from the auricle than it immediately contracts; the contraction is ſo conſiderable that ſome blood is propelled through the lungs, and what remains in the cavity keeps up ſo conſtant an irritation that the further entrance of freſh blood is prevented.

If an animal is opened as ſoon as it appears drowned, and a ligature paſſed round the pulmonary artery, the diſtention will be ſomewhat more conſiderable; but while the

was always very much dilated and filled with blood.

We have now traced the consequences of the suspension of respiration to the mechanical congestion of blood in the right side of the heart and lungs, it only remains to offer some few remarks as to the manner in which this congestion may occasion death.

It cannot be expected that we shall be able to ascertain this point exactly by dissection; we have hitherto been conducted entirely by it; the subject now, however, becomes too minute to rely altogether upon this mode of investigation, and we are compelled to call in other aid.

the power of contraction and the irritability are greater than in the parts connected with it, the full effect cannot take place.

Whoever has employed much time in making experiments of this kind, must have remarked, that although the contraction and irritability of the different parts of the heart observe a general rule, yet that particular exceptions now and then occur; when, therefore, an instance is observed where the pulmonary artery has been taken up, that the right ventricle loses its power of contraction some time before the auricle, there the distention is equal in every part of the right side of the heart.

As

As the congeſtion muſt produce its final effect either on the heart, the lungs, or the brain, we will examine upon which of theſe vital organs it is moſt likely to act.

We are naturally led, in the firſt place, to enquire whether it may not exert its fatal effects immediately on the heart itſelf.

If it operate immediately upon the heart itſelf, the action of the heart, more eſpecially of the affected ſide, muſt ceaſe as ſoon as the diſtention is formed.

I have already had occaſion to obſerve that this is by no means the caſe, for the heart in every inſtance continues to pulſate, and with a very conſiderable degree of force, ſometimes upwards of an hour after the appearances of death have taken place; and the right ſide, which ſhould be moſt immediately affected, almoſt always continues its action the longeſt, commonly at leaſt three times as long as the left ſide; how, therefore, it is poſſible that this congeſtion ſhould operate on the heart ſo as to induce the appearance of death in every other part of the body, and yet continue perfectly alive itſelf, is very much beyond my comprehenſion.

Can it produce this effect by acting upon the lungs?

The lungs are perfectly passive in respiration, and are destitute of sensation; they moreover do not appear to be further concerned in the vitality of the system, than as they facilitate the action of the air on the blood and blood-vessels: to effect this as completely as they do, it is necessary they should have a regular and constant motion, which, while it promotes as much as possible the action of the air on the blood, is admirably calculated to propel the blood through the pulmonary vessels; a circumstance that would not be readily effected without some such contrivance, on account of the vast quantity of blood that is to pass through so small a space.

When this motion then is interrupted, an impediment arises to the action of the air on the blood; and the blood is arrested in its passage from one side of the heart to the other.

We see, therefore, that although the stoppage of the action of the lungs necessarily causes death, yet that it must effect it by the

the medium of ſome other vital organ, inſtead of producing it immediately by itſelf.

If the congeſtion does not produce its final effect on the heart or lungs, it follows that the brain is the organ it muſt operate upon.

But it may not be improper to enquire, whether there be any, and what proof, of the reality of this circumſtance.

We will, therefore, firſt make ourſelves acquainted with the external appearance of the body, and the ſtate of the brain, as it appears on diſſection; next trace the conſequences that reaſon teaches us muſt enſue from the congeſtion in the great veins; and we will then obſerve in what manner it is likely the brain ſhould in conſequence be affected.

"The face is remarkably ſwelled; the eyes violently ſuffuſed with blood, enlarged, prominent, and ſometimes ſo protuberating that the eye-lids ſeemed inſufficient to cover them; the features of the countenance are generally diſtorted; and the tongue, in part, thruſt out of the mouth."

Extravaſation does not, in healthy ani-

mals, take place in any part of the brain; but there is a conſiderable fulneſs or diſtention of the veins of every part of that organ. The heads of various animals were examined likewiſe by ſeveral friends at my requeſt, and a certain degree of fulneſs, I was informed, always occurred.

The pulmonary artery, right ventricle and auricle, and the venæ cavæ, are diſtended with blood; in conſequence of this an accumulation of blood will take place throughout the whole venal ſyſtem; but the accumulation will be more conſiderable in the veins of the brain than in any other part, on account of the greater quantity of blood ſent to it, and the weaker contexture of its veſſels, which will more readily allow their capacity to be enlarged.

When any material addition is made to the bulk of the brain, ſymptoms of what is commonly called compreſſion muſt neceſſarily take place, on account of the cloſe connection between it and the cranium, for the bones of the cranium cannot relax; the pulpy ſubſtance of the brain muſt therefore be compreſſed, or forced into a ſmaller compaſs; every one is acquainted with the ſymptoms

toms that muſt in conſequence enſue; and every one knows, when they are violent, how ſpeedily they will occaſion death.

From the external appearances of the body, from the ſtate of the brain as it appears on diſſection, and from the conſequences that muſt enſue from the congeſtion of the great veins, it is evident that the brain muſt be in a ſtate of compreſſion; and, from the manner we know the brain to be affected by compreſſion, we may conclude, *that thoſe who die by drowning, die in conſequence of an apoplexy, or a compreſſion of the brain* *.

That

* Should any further proof of the reality of this circumſtance be required, I beg leave to refer to an Eſſay on the Recovery of the Apparently Dead, p. 37—58, where the ſubject is treated at ſome length; and where the ſymptoms attending perſons in the act of drowning, and in their recovery from that ſtate, are particularly noticed; and, likewiſe, the ſymptoms in other ſituations, ſuch as in hanging, in the inflammatory angina, in the actions of laughing, ſtraining, coughing, &c. all which ariſe from a greater or leſs interruption of reſpiration, and which conſequently produce ſimilar, although ſometimes leſs dangerous effects.

Whoever has any difficulty in conceiving that the preſſure on the brain is ſufficient to occaſion death ſo ſuddenly as is here repreſented, will do well to recollect the numerous

That the ſuſpended action of reſpiration is the firſt and original cauſe, will admit of no doubt; and it is equally evident, from what has been ſaid concerning the appearances on diſſection, that the right ſide of the heart and venal ſyſtem are very much diſtended with blood; it is clear alſo, from diſſection and the general collection of obſervations, that the diſtended ſtate of the veſſels of the brain is the immediate cauſe of the animal's loſing the uſual character and appearances of life.

From all this it is extremely plain that our firſt, principal, and great intention, ſhould be to remove the compreſſion of the brain, and the diſtention of the right auricle and ventricle, and of the great veins con-

ous inſtances of apoplexy which have ſo frequently terminated in ſudden and almoſt inſtant death, with which the books of Pathologiſts are crowded; where, after opening the body, no other cauſe is to be diſcovered except a diſtended ſtate of the veſſels of the brain.

It may not be improper here to remark alſo, that very many inſtances may be recollected where the conſtitution will permit the greateſt changes, provided they be gradually applied; but if too ſuddenly, the event is frequently very different.

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nected with them. How is this to be affected?

We have seen that the impediment to the passage of the blood from the right side of the heart to the left is owing to the diminished capacity of the pulmonary blood-vessels; if, therefore, these vessels are put in the same condition as when the blood usually circulates through them in a state of health, this impediment will be removed.

We have already observed, that when the pulmonary vessels are extended to the utmost, their capacity is not sufficiently large to allow the circulation to be carried on through them, even in a state of health; but that their alternate contraction and expansion is necessary to effect it: this action must therefore now be put in execution, and we must imitate the manner which nature compels us to act in, when from any particular circumstance we retain our breath, so that a larger quantity of blood than usual is collected in the right side of the heart; we are then obliged to make several deep inspirations and expirations, in order to propel the blood into the left side of the heart.

The lungs, therefore, being fully inflated, all the branches of the pulmonary artery will be immediately filled and dilated with blood by the contractions of the right ventricle, which we have feen ufually continues a confiderable length of time, and with a force feemingly fufficient to carry on the pulmonary circulation when no obftruction to the paffage of the blood exifts; fome of this paffes into the correfponding veins and left finus, but the contraction of the ventricle not being fo ftrong as in health, and the blood hefitating in its paffage through the minute ramifications, fome additional power becomes requifite to accelerate its circulation.

If the air is now forced out of the lungs by compreffing the cheft, or by any other means, this intention will be accomplifhed; for the volume of the lungs will be diminifhed, and the blood in the pulmonary artery and veins will, by inevitable confequence, be driven into the left finus and auricle; for it is well known that it cannot return into the right ventricle, on account of the action of the femilunar valves.

When

When the lungs are again inflated, the pulmonary veſſels will, as before, be immediately filled and diſtended from the right ventricle, for the blood cannot return from the left ſinus, as it is prevented by the valves; ſome of this will likewiſe readily paſs into the left auricle, and the remainder will, by imitating expiration, be urged forward in the ſame direction alſo.

By frequently repeating this operation, therefore, the diſtention of the right auricle and ventricle, and of the great veins connected with them, will be removed, and the compreſſion of the brain, which depended upon this diſtention, will be overcome alſo.

It is incumbent upon us in this place to enquire, whether bleeding can have any effect in removing the compreſſion of the brain, and the congeſtion in the right ſide of the heart and venal ſyſtem.

If an opening is made in any of the veins of the arm, the greater part of the blood in the veins below the orifice may, by rubbing the extremity, be evacuated; very little, however, can be procured, becauſe the left ſide of the heart and arterial ſyſtem being almoſt

almoſt deſtitute of blood, a freſh ſupply is intercepted: indeed, could any quantity be procured, it would do no good, although it might do harm, by leſſening the quantity in the left ſide of the heart and its appendages, without leſſening that in the right ſide and great veins, as the valves will effectually prevent the retrograde motion of the blood in the veins.

We cannot procure blood from the right auricle or ventricle, the pulmonary artery or venæ cavæ, by making an immediate opening into either of them; nor is it poſſible, by opening a vein in any acceſſible part of the body, to diminiſh in the leaſt the quantity of blood in any of thoſe cavities, and for the ſame reaſon that it could not be done by bleeding in the arm, the action of the valves preventing the blood's paſſing in a direction contrary to its natural courſe. It is therefore impoſſible to effect any diminution of the quantity of the blood in the right ſide of the heart by bleeding:—we will now enquire, whether, by that operation, we can in any meaſure remove the compreſſion of the brain, which, as we have ſeen, is the immediate

immediate cauſe of the animal's loſing the uſual ſigns of life.

To aſcertain this point, it will be neceſſary to conſider the manner in which the blood returns from the brain and its membranes.

The blood ſent to the brain returns from thence more particularly by the internal jugular veins, which are continuations of the lateral ſinuſes; ſoon after they get out of the cranium they run along the vertebræ of the neck, and paſs behind the ſterno-maſtoidæi, and omo-hyoidæi, and end in the ſubclavian veins. The internal jugular veins, therefore, are too deep to attempt the draining off blood from them.

But although the internal jugular veins are the principal conductors of the blood from the inſide of the head, yet the blood is in part conveyed from the brain itſelf into the external jugulars by the orbitary ſinuſes, which communicate with the venæ angulares, frontales, naſales, &c. The poſterior external jugulars receive veins which come out of the cranium by the poſterior maſtoide hole from the lateral ſinuſes; they alſo receive the occipital veins which have further communication

munication with the lateral ſinuſes, and under the angles of the lower jaw the poſterior and anterior external jugular veins communicate. But independent of, and beſide theſe, there are a great variety of communications between the internal and external jugular veins themſelves.

It cannot admit of the ſmalleſt doubt, therefore, but that by drawing off blood from the external jugular vein, we ſhall diminiſh the quantity of blood in the brain; and, as the compreſſion of the brain, and its conſequences the loſs of the appearances of life, depend upon that ſuperabundant quantity, it will be adviſable in all caſes, but particularly in thoſe when the external appearances of diſtention are violent, to have immediate recourſe to that operation.

It is evident, from what has been ſaid reſpecting the operation of artificial reſpiration, that it has the moſt powerful effect in removing the congeſtion about the heart and lungs, and conſequently the compreſſion of the brain likewiſe; on this account bleeding may be thought unneceſſary, but, as it will materially expedite the removal of the compreſſion,

preſſion, I am of opinion it ought by all means to be employed.

As ſoon as the blood is thus conveyed into the left ſinus and auricle, it is from thence propelled into the aorta, its large branches, and ſmall ramifications; the veſſels having, however, in a good meaſure loſt their irritability, or power of contraction, which is univerſally allowed to be the principal cauſe of promoting the circulation through the ſmaller order of veſſels, an obſtruction will begin to take place, and the further progreſs of the blood into the correſponding veins will be prevented. How is this obſtruction to be overcome?

The only method of ſupplying the defect of the vibratory motion of the ſmall veſſels, will be by alternately compreſſing and dilating them; and in this manner their contained blood muſt of neceſſity be driven towards the heart, as the valves will prevent its retrograde motion. Hence we ſee the great advantage that is to be obtained from the proper application of frictions, more particularly when they are applied to the extremities.

When the blood is in this way, with ſome degree of equality, diſtributed through the vaſcular ſyſtem, we have an opportunity of paying more attention to the ſupport and increaſe of the heat remaining in the body, which we know, from a variety of circumſtances, is very intimately connected with the healthy ſtate of the ſyſtem, and which, therefore, at this time demands our aſſiſtance.

It does not appear, however, that the conſtitution at this time, I mean when all the functions are either entirely ſuſpended, or very much diminiſhed, requires any great degree of heat for its ſupport; on the contrary, it appears from many obſervations, and particularly from Mr. Hunter's experiments, "that the degree of external heat ſhould bear a proportion to the quantity of life," that "warmth cauſes a greater exertion of the living powers than cold; and that an animal in a weakly ſtate may be obliged to exert a quantity of the action of life ſufficient to deſtroy the (living) powers themſelves."

I am further confirmed in this opinion from

from the event of the following experiments.

An animal was drowned, and the temperature of its body reduced as ſoon as poſſible two or three degrees below the temperature of the air, which was ſixty-one degrees, by allowing it to remain in the water: ſmall electrical ſhocks were now paſſed through the extremities, of ſuch a degree of ſtrength as was merely ſufficient to excite a contraction; the animal was then plunged into water three degrees warmer than the muſcles of its thigh, and the heat of the water was increaſed three degrees every five minutes, till it became of the healthy ſtandard; notwithſtanding the heat was ſo gradually applied, the power of contraction in the muſcles diminiſhed at every obſervation ſo much, that it was neceſſary to increaſe the ſtrength of the ſhock every time; but ſome time before the body had acquired the natural ſtandard, the irritability of the muſcles was entirely deſtroyed.

The experiment was repeated with this difference: the heat of the body was reduced in one inſtance to ſeventy degrees, in another to eighty, the animals being kept

in the water twenty minutes; the degree of irritability was then accurately ascertained, and the heat of the bodies increased in the same gradual manner as before; but in neither instance, nor in any experiments I afterwards made, did the powers of life increase; on the contrary they evidently diminished, and, as far as I could judge, equally as fast as when no artificial heat was applied.

In whatever point of view this subject is observed, it is evident that the external heat should be applied in the most gradual manner; and even when this is done with every precaution, it will be highly advisable to continue the body at a moderate degree of heat, and never attempt any degree equal to the natural temperature, until the symptoms of life are sufficiently strong to bear so great an exertion.

While I am treating upon this part of the subject, I cannot avoid noticing some directions that have lately been given concerning it, which I should not think it advisable to follow; and I the more readily do it, as they are delivered by a gentleman for whose abilities I entertain a great respect, and to whose opinion

opinion the world will ever be inclined to pay much attention.

Dr. Goodwyn, in his book "on the connexion of life with reſpiration," ſpeaking of the application of heat, after ſome judicious obſervations, ſays it ſhould be applied very gradually and uniformly, and it may be raiſed to ninety-eight degrees, but not further than one hundred.

"When the body is warmed uniformly, and the heat of the interior part about ninety-eight degrees, we direct our attention to the ſtate of the thorax; and, if the patient makes no attempt to inſpire, we proceed to inflate the lungs with air."

It is to me a matter of extreme aſtoniſhment, that we are here directed to wait till the body is uniformly warm, and the heat of the interior parts about ninety-eight degrees, before we turn our attention to the ſtate of the thorax, and proceed to inflate the lungs. The enormous length of time neceſſary to give a body, that has in winter fallen into the water, and for a conſiderable time been expoſed to the cold bleak air, an uniform and natural degree of heat, will readily be conceived by thoſe who have ſeen perſons in

ſimilar ſituations; and by them it will naturally be ſuppoſed, that by the time the body has acquired this degree of artificial heat, the vital principle, unaided by the ſmalleſt degree of circulation, will be too far extinguiſhed for any future recovery. I muſt approve the directions for conducting the application of heat, becauſe precautions nearly ſimilar to mine are recommended, and for ſimilar reaſons; but where ſo much dependance is placed on the immediate application of heat, and where ſo great a quantity is directed, I fear its application will be made too ſuddenly, and thereby deſtroy the ſmall remains of vitality, or at leaſt materially impede its further increaſe.

No reaſon is given by Dr. Goodwyn, nor do I conceive any good reaſon can be given, why we are to wait till the body is thoroughly warmed before we inflate the lungs; for, from any thing that appears to the contrary, the blood may, according to his theory, be as readily changed at one period of the treatment as at another. In every caſe of ſuſpended animation, therefore, I ſhould, on every account, have recourſe to artificial reſpiration; as ſoon, at leaſt, as I had placed

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the body in the beſt ſituation for the application of external heat.

No one, I believe, at this time doubts that the conſtant ſupply of animal heat is occaſioned by the action of the air on the blood in reſpiration: this is rendered ſufficiently evident by the very accurate and elaborate experiments of Dr. Crawford; and, from the manner in which that gentleman explains the generation of animal heat, we have reaſon to apprehend, that the circumſtance of artificial reſpiration is one of the moſt powerful and effectual means we can employ for producing heat in the body at this time; and this it will be likely to do in proportion to the remaining degree of life. "The pure air," ſays Dr. Crawford, "is received into the lungs containing a great quantity of elementary fire; the blood is returned from the extremities impregnated with the inflammable principle; the attraction of pure air to the latter principle is greater than that of the blood. This principle will, therefore, leave the blood to combine with the air; by this combination the air is obliged to depoſite a part of its elementary fire, and as the capacity of the blood is

at the ſame moment increaſed, it will inſtantly abſorb that portion of fire which has been detached from the air." Now there is every reaſon to think that the blood in the lungs of drowned animals is very fully impregnated with the inflammable principle, and, conſequently, if there be any degree of vitality remaining in the ſyſtem, the repeated application of freſh air to the lungs will be likely to produce effects ſimilar to, although in a ſmaller degree than in thoſe who have a greater degree of life.

In confirmation of this idea, it ſuits my purpoſe to obſerve, that I once attended a perſon who had been ſome conſiderable time in the water, and was a ſtill greater length of time expoſed in his wet clothes to the action of the air. When removed on ſhore there was no opportunity in the houſe to which he was conveyed of applying external heat; but all the other means of recovery were employed with unremitting aſſiduity, in order, if poſſible, to compenſate for the loſs of ſo powerful a remedy: artificial reſpiration was, in particular, very conſtantly and attentively employed, but all to very little purpoſe; for, although there was evidently

dently ſome irritability in the body, yet the vital functions could never be renewed. In the progreſs of the treatment there was one circumſtance which pleaſed us not a little, and from which I entertained conſiderable expectations of a favourable termination; it was, that although no external heat of any conſequence had been applied, yet after our remedies had been employed ſome time, there was a generous warmth diffuſed over the greater part of the body, and which I attribute to the action of the air on the blood in the lungs.

When the compreſſion of the brain, and the diſtention of the right auricle and ventricle, and of the great veins connected with them, are removed; and when the irritability of the heart and vaſcular ſyſtem is prudently increaſed by the proper adminiſtration of heat, it is from every conſideration rendered in the higheſt degree probable, that we have done every thing in our power; we have removed the original cauſe, have diminiſhed the conſequent effects, and have increaſed the irritability as much as could be done conſiſtently with prudence: in my opinion art can do no more. The event of the

the caſe will now depend entirely on the remaining powers of the conſtitution: if they are conſiderable, the heart will be enabled to act with force ſufficient to propel the blood through the vaſcular ſyſtem; but if the power of contraction is materially weakened, the blood will either not circulate at all, or elſe in ſo ſmall a degree as to be inſufficient to continue the neceſſary functions of life.

We will take this opportunity, however, of enquiring whether, under any, and what circumſtances, other remedies that have been ſuppoſed particularly uſeful may be really ſo. The principal of theſe are electricity, particular ſtimuli adapted to the different organs of ſenſe, and irritating medicines thrown into the ſtomach and inteſtines.

That ſhocks of electricity, when ſent through the region of the heart, will ſtimulate it to contraction, is moſt certainly true; and from this circumſtance I ſome time ſince entertained very conſiderable expectations, from its application in the recovery of animals whoſe reſpiration had been ſuſpended.

But ſince that time I have had better and more frequent opportunities of obſerving the

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real ſtate of the heart, which I have in another place mentioned as continuing its contractions ſome conſiderable time after the external characteriſtics of life have quitted the body; as, therefore, it already poſſeſſes not only the power of contraction, but does abſolutely continue to contract, and that with apparently ſufficient energy to propel the blood through the veſſels, if there were no impediment to its paſſage, any additional ſtimulating power will be wholly unneceſſary; and conſequently it does not appear what good effect electricity can produce when applied to the heart.

It is not probable, either from reaſon or experiment, that it can have any influence on the brain, which is entirely of a pulpy ſubſtance; or on the lungs, which are deſtitute of muſcular fibres, and are perfectly paſſive in reſpiration.

The next part on which it might operate with advantage, is the diaphragm, as it is ſo intimately connected with the vital organs, and is ſo readily excited to contraction; but even here its utility is not very apparent, for the action of the diaphragm can be of no further ſervice than by producing motion of

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the lungs, and consequently a small degree of respiration, which we know how to produce much more readily and effectually by other means.

If electricity is, therefore, ever admissible in the treatment of cases now under our consideration, it must be when respiration has long been suspended, at which time the action of the heart will necessarily be much diminished.

Although I do not expect any advantage from its application, yet, so far as I am able to judge, if it be prudently and cautiously applied it will not do any harm; if a very strong shock is sent through any muscle, it will lessen its irritability; and if it be frequently repeated, its power of contraction will soon be destroyed: the irritability of the system at large, however, will not suffer in the least, nor even the irritability of those parts that are in immediate contact with the affected muscle. I have frequently sent strong shocks through one auricle or ventricle of the heart while both have been beating, till both the motion of the part and its power of contraction have been destroyed, and yet the one that has not been electrified has continued

nued its contraction regularly, even for hours after. Small shocks, I have no doubt, in some degree lessen the irritability of the parts through which they pass, but it is so trifling as to be almost imperceptible; and on this account I would recommend, that the strength of the shock should be no greater than merely sufficient to occasion a contraction; what this precise degree is in the human frame I have not yet had sufficient experience to ascertain, although I can very well judge in various kinds of quadrupeds. I should, however, commence this operation with shocks about two or three tenths of an inch, from a small vial containing not more than ten or twelve inches of coated surface; if these did not produce effect, I would gradually increase both the length of the shocks and size of the vial; and, proceeding in this manner, it will be impossible to do harm, let their strength be ever so great; although I apprehend, if smart shocks from a pint vial do not produce effect, that it will not be possible to do it by any means whatever.

When an animal loses the external characteristics of life, he loses sensation and

voluntary

voluntary motion likewiſe: this is extremely evident, and very eaſily proved; for if an animal is covered with water till it appears dead, it may then be opened and cut in every direction, without exhibiting the leaſt motion or ſenſe of pain from ſuch treatment; it is abſurd, therefore, to ſuppoſe that remedies applied to parts deſtitute of feeling, and the power of motion likewiſe, can be productive of any effect whatever upon the part, either good or bad; as well might we expect to operate upon the feelings of a ſtone, or any other inanimate ſubſtance, as to imagine it is in our power to excite thoſe of animals under theſe circumſtances. Irritating remedies applied to the ſkin, and all the other ſtimuli adapted to the different organs of ſenſe, cannot therefore be of the leaſt benefit while ſenſation and voluntary motion are ſuſpended.

From the ſympathy that is well known to exiſt between the ſtomach and the vital organs, more particularly when in a ſtate both of health and diſeaſe, we are led to conceive, that exciting its action may be productive of advantage in the preſent ſituation, and ſo moſt aſſuredly it would, were we able to

effect

effect it; but as the nerves of the ſtomach are in the ſame ſtate as thoſe in the other parts of the ſyſtem, that is, deprived of their power of action, it will not be poſſible for us, by any means, to produce any ſenſation or action whatever in the ſtomach, until the energy of the brain be in ſome meaſure reſtored.

All this is confirmed by a variety of experiments, for I was never able to obſerve that any ſtimulus applied to the internal ſurface of the ſtomach produced a perceptible effect; if a ſolution of white or blue vitriol, or emet. tartar, were injected, it did not produce vomiting; nor did ſtimulating medicines increaſe either the ſtrength or quickneſs of the heart's motion when reſpiration and the uſual action of the brain were interrupted, and conſequently when ſenſation and voluntary motion were ſuſpended, and the uſual ſigns of life had diſappeared.

Applications to the internal membrane of the inteſtines will be attended with no better effect; but even if it were poſſible to act on their nerves and excite the periſtaltic motion, it does not appear what influence this would have on the vital functions, and the ſyſtem

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at large; for the periſtaltic motion will continue ſometimes upwards of two or three hours after the appearance of death has taken place, it will even continue after the brain is removed from the body, nay after the inteſtines themſelves are removed: the reaſon of this I apprehend to be, that the fæces are the proper ſtimulus of the inteſtines, and the moſt powerful that can be applied to them; for if any other ſtimulus, ſuch as warm atmoſpheric air, air loaded with the effluvia of aromatic ſubſtances, warm water, aromatic decoctions, or electricity, be recurred to, after the motion has once ceaſed, it has never happened to me to obſerve that they were reproduced. The nature of this ſtimulus is not affected or altered by any change that takes place in the ſyſtem, and therefore it continues to exert its effects on the inteſtines ſo long as their irritability remains. So that it does not ſeem, even if it were in our power to continue or increaſe the periſtaltic motion of the inteſtines, that it would be in any reſpect advantageous.

If theſe remedies are at any time capable of producing good effect, it muſt be when the

the principle of *ſenſibility* is in ſome meaſure returned; that is, when the body begins diſcover ſome appearances of life, at this time it may be judged unneceſſary; but from various conſiderations I am diſpoſed to believe that they may be of much real benefit. I will not, in this paper, dwell particularly on them, as it ſeems to me that I have already done that ſufficiently in another place. I will content myſelf with obſerving, generally, that ſtimulating remedies of every kind, applied to the different organs of ſenſe, will increaſe the excitement and energy of the brain, and the other vital functions muſt of neceſſity be increaſed alſo.

In caſes of extreme debility ariſing from other cauſes, and where all the vital actions are much diminiſhed, a ſimilar mode of treatment is adopted with much ſucceſs; bliſters are applied to irritate the nerves of the ſkin, the volatile alkali to ſtimulate thoſe of the noſtrils, and a generous cordial is thrown into the ſtomach; it is well known that any of theſe remedies applied individually will rouſe the languid powers of life, and increaſe the action of the heart and arteries;

teries; but if they all are had recourſe to at the ſame time, then the effect will be proportionably powerful.

I am ſtill of opinion that the action of vomiting, if excited by ſuch medicines as do not occaſion a preceding or conſequent nauſea, may be productive of much good. Nauſea weakens and debilitates the animal powers to a very great degree; it is ſelf-evident, therefore, that it muſt be extremely prejudicial in ſuch caſes as we are now treating of, and ought moſt particularly to be avoided; but full vomiting may be effected without inducing any ſuch ſymptoms: it then produces a ſtrong action in the ſtomach, diaphragm, and abdominal muſcles; the conſequence of this action muſt neceſſarily be a ſtronger propulſion of the blood throughout the whole vaſcular ſyſtem, but more particularly through the brain and all the abdominal viſcera: ſtagnations of the blood in the inferior order of veſſels will be overcome, and by ſuch means, it is probable, the equable circulation of the blood throughout the whole ſyſtem will be effected ſooner than by any other.

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Of what, and how great, importance the eſtabliſhment of a free circulation muſt be, is evident to the moſt ignorant; ſuffice it to ſay, that if a perfect recovery does not enſue after ſuch appearances, it muſt, in my opinion, be attributed to improper treatment.

From what has been ſaid, therefore, I conclude, that neither ſtimuli applied to the different organs of ſenſe, or irritating medicines thrown into the ſtomach and bowels, can produce any effect while ſenſation and voluntary motion are ſuſpended; but that they are capable of producing much advantage, if applied when the principle of ſenſibility is in ſome meaſure returned.

APPENDIX.

I have, upon a former occaſion, mentioned the electrical ſhock as being the *teſt* or *diſcriminating characteriſtic of any remains of animal life*, and my ſubſequent obſervations and

experiments have only ſerved to confirm me in the opinion that it is the only means by which we can diſtinguiſh between abſolute and apparent death.

It may not be amiſs, however, in this place to obſerve, that as the irritability is different in different parts of the body, and as it is materially diminiſhed in ſome parts before it is at all affected in others, electricity, applied to a *particular part*, cannot be conſidered as an accurate and perfect evidence of the ſtate of the *whole ſyſtem*: to determine this, therefore, with preciſion, it will be neceſſary to paſs ſmall ſhocks in various directions through the body, when, if they produce contractions, we may be certain the parts through which they were ſent are alive; if not, that they are abſolutely dead *.

If

* The length of time the irritability continues, and the part it continues in, are different in different experiments. Five hours and an half is the ſhorteſt, and twenty-three hours and forty minutes is the longeſt, time I have obſerved the irritability to continue in the heart; in ſome it has continued longeſt in the right auricle, but in at leaſt as many it has continued longeſt in the left auricle: ſometimes I have found it has quitted almoſt every

If tolerably ſtrong contractions follow very ſmall ſhocks, the remaining powers of life may be deemed very conſiderable; but if ſtrong ſhocks are requiſite to produce trifling motions, the irritability muſt be almoſt entirely exhauſted.

In this manner, therefore, we may judge with great accuracy concerning the degree of vitality remaining in all the external parts of the body; and may likewiſe determine, if we obſerve attentively, the motion of the diaphragm; but I do not know in what manner we can perceive the contraction of the heart, in which organ the irritability moſt commonly continues the greateſt length of time, more eſpecially if reſpiration has long been ſuſpended, for then the left ventricle and arterial ſyſtem being almoſt deſtitute of blood, we cannot feel any thing like a pulſation in the larger arteries, a circumſtance that may indicate when reſpira-

every part of the heart one, or even two hours, before it had left the extremities; but I have met with but few inſtances where it remained in any other part after it had entirely quitted the heart.

tion has lately ceaſed, as at that time the left ventricle, and arteries proceeding from it, contain a quantity of blood.

An animal body cannot be ſaid to be poſitively and abſolutely dead, ſo long as any part of it can by any means be brought into a ſtate of contraction; but it is far from being neceſſary, when we wiſh to determine whether the body is in a recoverable ſtate, to be certain that every part has loſt its irritability; for I am ſatisfied, by abundant experiments, that the irritability may, and does continue, in *every part of the body*, a conſiderable time, ſometimes an hour or two, after the animal could not be recovered.

Upon the whole then, and from the experiments I have made, I am ſufficiently convinced,

That, in caſes of what is uſually called ſudden death, a recovery is not to be expected if the irritability of any of the extremities is deſtroyed, or even if it is materially diminiſhed.

In a late publication on this ſubject it is ſaid, with ſome degree of exultation, that

"whenever

"whenever the functions of an animal are suddenly suspended, and the body puts on the appearance of death, it is always in our power to determine whether it be really dead, by restoring the temperature, and by inflating the lungs with proper air." It does not appear, however, that there is any thing new or important in this observation; for if an animal does not recover from such treatment, there are very few who would expect it to recover from any other. Dr. Goodwyn has not stated any particular length of time as being requisite to make the determination; so that in one sense he is sure to be right, for if these means are made use of without effect for several hours, it will not be doubted that absolute death has taken place.

When a kitten, or young puppy, is drowned in the usual manner, all voluntary motion ceases, the senses are abolished, and the animal appears perfectly dead in about one minute and twenty seconds. In a very short time, however, from fifteen seconds to one minute, it is affected with a violent and general convulsive motion: this motion is

ſtrong, regular, and ſlow; ſometimes remaining near five ſeconds. It returns in a few ſeconds, and is repeated two or three times in every minute, ſometimes for the ſpace of a quarter of an hour, but more commonly, and at a medium, for about ten minutes after the natural ſtruggling has ceaſed.

I am perſuaded this convulſive motion is entirely an extraordinary exertion of the remaining powers of life to continue reſpiration, and for this reaſon, that the diaphragm and abdominal muſcles are more particularly concerned in the action; but all the muſcles connected with reſpiration, both ordinary and extraordinary, are contracted likewiſe; the convulſion is alſo attended with a kind of gaſping, which is a further corroboration of the opinion: indeed it is placed out of all doubt, for if the animal be removed from the water, it remains perfectly ſtill till the convulſion returns, which is accompanied with a very deep inſpiration, and ſucceeded in a few ſeconds by an expiration.

Several experiments were made upon the following plan:

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In the ſpace of a minute after the ſtrugglings had ceaſed, the animal was removed from the receiver and expoſed to the open air: inſpiration accompanied the next convulſive motion, and reſpiration was ſoon eſtabliſhed.

The ſame event happened when the animal was withdrawn at the end of the ſecond, third, and fourth minute; they ſeldom recovered at the fifth or ſixth, and I do not perceive by my notes that any revived after the ſeventh, although they might make ſeveral imperfect reſpirations after that time.

As far as my experiments upon ſuch animals as are here inſtanced have gone, we may be allowed to conclude, that they will very generally recover their vital functions, after the natural ſtrugglings from drowning have ceaſed for the ſpace of four minutes.

I made a few experiments with the view of obſerving the longeſt general period at which it would be poſſible to recover animals that had been immerſed in water, by the ſingle remedy of reſtoring reſpiration; the ſuſpenſion of which was the cauſe of inducing the appearance of death. I had not an oppor-

tunity, however, of purſuing this intereſting ſubject with that accuracy or attention to which it is ſo deſervedly entitled, on account of the difficulty of procuring a ſufficient number of ſubjects for experiments. All that I ſhall therefore, at this time, mention reſpecting it is, that although I have been able, by imitating natural reſpiration, to recover ſome animals after they had been eight, ten, or twelve minutes under water, I have obſerved ſeveral inſtances when the operation had been performed with accuracy in which the animal did not recover, notwithſtanding it had not been immerſed ſo long as ſome others that had recovered ſpontaneouſly.

I cannot venture to draw any general concluſion from the event of my experiments on this part of the ſubject. If, however, I might be allowed to form any *opinion* upon it, it would be this: that reſtoring ſuſpended reſpiration will probably not be ſufficient to renew the vital functions, if it be not attempted before the convulſive motions of the animal have ceaſed *.

From

* I have before remarked, that the continuance of this motion is uncertain; the ſooneſt I obſerve in my notes is three

From the appearances on the diſſection of animals that have been hung, it is natural to conclude that their death ariſes from the ſame cauſe as thoſe which are drowned, a ſuſpenſion of the action of reſpiration. I have always, however, had ſo much difficulty in conceiving how it was poſſible, that the trachea could be ſo completely ſhut by the preſſure of the cord, as wholly to intercept the paſſage of the air, that I could not allow the death of the animal to be owing to that cauſe only, although I did not heſitate to admit it as the principal one.

Conſiderable light may be thrown on this circumſtance, by hanging an animal whoſe trachea is not included in the ligature, or into whoſe trachea an opening has previouſly been made, ſo that the paſſage of the air into and out of the lungs may not be intercepted; if an animal in this ſituation ſhould die in the ſame, or nearly the ſame time that

three minutes, the longeſt twenty; but the medium of many experiments is eleven minutes and thirty-five ſeconds; the probable time of recovery, therefore, will vary likewiſe, but the average may perhaps be about eleven minutes and a half alſo. It is a ſubject, however, that demands a further inveſtigation.

another

another animal of the ſame age and ſpecies would die hung in the uſual manner, the death of animals that are ſo hung muſt be attributed to ſome other cauſe than a ſuſpenſion of reſpiration: but if the animal ſhould live any conſiderable time longer than uſual, its death ſhould then be imputed to that circumſtance only.

A dog was hung in the uſual manner; in eight minutes his ſtruggling ceaſed, and in nine minutes the pulſation of the heart could not be perceived.

An opening was made into the trachea of a dog about two months old, and a ligature being paſſed round his neck above the opening, he was hung as uſual: he ſtruggled for ſome time, but breathed freely through the aperture in the intervals of ſtruggling: in this kind of way the animal continued for the ſpace of an hour and an half, when he was cut down, and appeared to have received but little inconvenience from the ſuſpenſion. Early the next morning he eſcaped from his place of confinement, and became ſo troubleſome to the ſervants that they turned him away.

If the death of animals that are hung arifes from the preffure of the cord preventing the return of the blood from the brain, the animal fhould die very foon when a tight ligature is made round the blood-veffels of the neck without including the trachea.

The trachea of a dog was feparated from the contiguous parts, and a cord paffed under it and round the vertebræ of the neck, fo as to include every blood-veffel of the neck, but to leave the opening into the lungs free and pervious. One end of the rope being then made faft to a fixed point, the force of three men was exerted to draw it tight, which being continued feveral minutes, he was left fufpended, the cord ftill drawn moderately tight. In this fituation the animal continued alive two hours and ten minutes, and it feemed as if he then died more in confequence of his own exertions than any other caufe.

From thefe experiments it appears,

That the death of animals which perifh from hanging is not occafioned by any compreffion of the nerves, arteries, or veins of the neck; but is owing entirely to the trachea being fhut

ſhut by the preſſure of the cord, and thus cauſing a ſuſpenſion of reſpiration.

I cannot omit this opportunity of making ſome remarks on one or two inſtruments lately recommended for inflating the lungs.

Dr. Goodwyn intends that his ſyringe ſhould inflate the lungs and draw the air out again; and this it appears as if it would do very effectually; but yet, if I underſtand the conſtruction of the inſtrument, one half of the air laſt expired, or what remains between the opening (a) and the lower part of the cylinder, will be again forced into the lungs, becauſe there is no opening at the lower part to permit the eſcape of the air, as there is at the upper part; and of this the Doctor ſeems aware when he ſays the *greater* part of the expired air eſcapes into the atmoſphere. If the blood of an animal under the circumſtances we ſuppoſe our ſubject to be, has the power of phlogiſticating air thrown into the lungs, the air next expired will of courſe be worſe than when thrown in: only half of this foul air, however, is thrown out of the inſtrument,

inſtrument, the remainder (half of which is air that has once been in the lungs) is mixed with the ſame quantity of freſh air, and thrown into the lungs again; hence it is evident that the air thrown in becomes worſe every time, and that, in every point of veiw, air from the lungs of an healthy perſon would be preferable.

I have before remarked, that it would be adviſable to introduce as large a quantity of air into the lungs as they can well contain, and this, whether it be done on the ſuppoſition of the air acting chemically or mechanically: one hundred inches is recommended, but as our lungs will hold three times that quantity without inconvenience, I think it would be adviſable to uſe three times as much.

In giving the deſcription of a fumigator, Dr. Cogan makes this remark, "ſome have been conſtructed ſo as to work with a piſtern in the manner of a ſyringe," but "they are *expenſive, complicated, and ſoon out of order, and are worked with great labour and fatigue.*"

This inſtrument is, however, ſaid to anſwer the purpoſe of extracting water from the

the lungs, as well as of throwing air into them.

When it is intended to anſwer this purpoſe, the inſtrument acts in the manner of a common air-pump, though, as the piſtern is drawn but half way up the cylinder, only fifty inches of air can be drawn out. Dr. Goodwyn has ſhewn in another place, that there are upwards of one hundred inches of air in the lungs of dead perſons, ſo that not half of the air in the lungs will be extracted. The only way in which an inſtrument of this kind can operate ſo as to effect the extraction of water, muſt be by diminiſhing the capacity of the air-cells, and in this manner half their contents, whether air or water, will of courſe be evacuated; for evident reaſons the air will firſt be drawn into the cylinder, and the greater part of the water will remain in the lungs, till, if it could be ſo contrived, by repeated exſuctions, the cells of the bronchia are drawn ſo cloſe together that their contents muſt be expelled. In order to explain more correctly the effect of this inſtrument, let us ſuppoſe a perſon taken out of the water with a conſiderable

ſiderable quantity (fifty inches for inſtance) of water in his lungs: the inſtrument being properly applied, fifty inches of ſomething are drawn out of the lungs; by far the greater part of this will, of courſe, be air, becauſe that being lighteſt will be uppermoſt; and if any quantity is confined in the bronchia by the water, it, by means of its great elaſticity, will force its way through the water when the firſt exhauſtion has taken place. As ſoon as the inſtrument is removed, the external air will occupy the place of whatever was drawn out by the firſt operation; ſo that when the inſtrument is uſed again, the freſh air, which has juſt entered, is extracted, but the water muſt ſtill continue almoſt the ſame in the lungs, and ſo it muſt, let the operation be repeated ever ſo often, and for the ſame reaſons.

From this view, it appears that this inſtrument poſſeſſes no advantage over thoſe in common uſe for inflating the lungs; and that, in the ſtate in which it is here deſcribed, it will not anſwer the purpoſe of extracting water from the lungs, although with ſome alterations it might be made to anſwer that purpoſe effectually; but how ſafely, I will

not pretend to ſay; of that point I have many doubts.

I procured an hollow glaſs globe, capable of containing a few ounces; two openings were made into it oppoſite each other; in one I fixed a valve of oiled ſilk, this valve would allow air to paſs from the globe, but not into it; and by means of a ſcrew it was connected with a ſmall exhauſting ſyringe: in the other opening of the globe I fitted a tube proper to be introduced into the trachea; the inſtrument was now in effect an air pump, the globe anſwering the purpoſe of a receiver, and the valve connected with it allowing every degree of exhauſtion that might be required. If the pipe of this inſtrument be introduced into the trachea of a drowned animal, and the air drawn out of the globe, whatever is in the trachea or lungs, will be brought from thence into the globe. The pipe was therefore introduced into the trachea of a ſmall animal, and the piſtern gradually drawn up, but, notwithſtanding this attention, ſome of the blood-veſſels were ruptured, for as much blood as water was perceived in the globe; the operation, therefore, of extracting water from the lungs by any

any exhaufting inftrument, is, on account of the danger attending it, what I fhall never attempt, except in my experiments on brutes.

It is poffible, however, that there may not be fo large a quantity of water in the lungs as to render it neceffary to have recourfe to any particular method of removing it: I always concluded fo from the event of my own experiments, and my opinion is not altered by the fmall quantity Dr. Goodwyn mentions to have found in his; for if the water were even in greater abundance, I fhould not apprehend that it would prove any material impediment to *the action of the air on the blood*, for we daily fee that the colour of the coagulum changes foon after it is drawn from the vein when it is confiderably below the furface of the ferum. In certain cafes of catarrh likewife, and where, from general relaxation of the veffels of the lungs, a great fecretion of mucus takes place, we have reafon to think that fometimes, and in particular cafes, the whole of the air-cells are occupied with mucus inftead of air, and yet the atmofphere exerts its ufual influence over the blood in the lungs; fo that if thefe

circumſtances are true, and no one can deny them, it does not appear why a very thin ſurface of water ſhould render it "impoſſible to apply the freſh air ſufficiently near to change the quality of the blood."

A pair of double bellows has lately been made known to the public; they are, as well as the inſtrument laſt deſcribed, intended to imitate expiration as well as inſpiration; and, from the account I have ſeen of them, appear very well calculated to anſwer thoſe purpoſes, if they are large enough to contain a ſufficient quantity of air. I do not, however, perceive the leaſt advantage theſe can have over Mr. Hunter's, and their very complicated conſtruction will render them extremely liable to be frequently out of order.

ARTICLE XIV.

A Deſcription of four Caſes of the Gutta Serena, cured by Electricity: To which is added two Caſes of the like Nature, in which the chief Means of Cure was a Mercurial Snuff. With Incidental Remarks annexed to the Caſes.

By JAMES WARE, Surgeon.

Read May 11, 1789.

CASE I.

A lady, ſixty-three years of age, who had loſt the ſight of the left eye twenty years, in conſequence of a violent ophthalmy, was ſuddenly attacked, in April 1780, with an appearance like black lace hanging before the right eye, and confuſing every object at which ſhe looked. It had continued ten days before I ſaw her. Each day the blackneſs became

deeper and more extenſive; and, at that time, every object preſented before the eye was altogether inviſible. On examining the eye, I found that the pupil preſerved its natural ſize and colour; and that the power of the iris to dilate and contract this aperture, according to the greater or leſs degree of light to which the eye was expoſed, was not yet wholly loſt. The lady had long enjoyed a good ſtate of health, and, the diſorder in her ſight excepted, was at the time of conſulting me perfectly well. I immediately applied the electric air by means of a pointed conductor, and continued the application about ten minutes. It was repeated the next day; and on the third, immediately after being electrified, ſhe had a ſtronger perception of the light. The ſame application was repeated every day for a fortnight, when ſhe diſtinguiſhed all large objects before her. I now placed her on the glaſs-footed ſtool, and took ſmall electric ſparks from the eyelids and integuments ſurrounding the eye. This experiment, however, was ſoon followed by a pain in the head, which rendered her ſight more confuſed. For the preſent, the uſe of electricity

tricity was therefore wholly omitted. Three leeches were applied to the right temple, and afterwards a bliſter of the ſize of half-a-crown to the ſame part. By theſe means the pain in a few days was removed. The electric air was then again applied, but without ſparks. It was continued about ten days longer; at the end of which time ſhe recovered the perfect uſe of the right eye: and this ſhe preſerved till the time of her death, which did not happen till ſeveral years after.

CASE II.

Mrs. R. when about thirty years old, was ſuddenly attacked with a violent head-ach, accompanied with ſickneſs, which continued with little intermiſſion or abatement for the ſpace of three days. After undergoing this long paroxyſm of ſevere pain, and probably very much owing to the ſame cauſe, the ſight of the left eye became impaired in ſo conſiderable a degree, as to be incapable of diſtinguiſhing any object, though placed immediately before it. At that time the right eye did not appear to be at all af-

fected; and, during a few following days, ſhe could ſee with it as perfectly as before. But ſoon after, the diſorder extended to this eye alſo; and in eight days from the firſt ſeizure of the head-ach, ſhe ſo far loſt the ſight of both eyes, as not to be able diſtinctly to perceive even the blaze iſſuing from a large fire. There ſtill, however, remained ſome degree of a glimmering ſight with the right eye, ſo as to make her ſenſible of the difference between night and day. But it was not long before ſhe became totally dark in this eye as well as the other: and on the third day of her being ſo I was firſt conſulted. On examination I found that both the pupils were conſiderably dilated, and that their ſize was unalterably the ſame, though acted upon by the brighteſt light. I immediately paſſed a ſtrong ſtream of the electric fluid through both eyes, which was continued for about ten minutes. This, though powerful enough to be ſtrongly felt when applied to the eye, and even to the hand, of other perſons preſent, ſeemed to affect the patient only in a very ſmall degree: and the application was renewed ſeve-

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ral days before ſhe was ſenſible of the leaſt amendment. In about a week from the time when the firſt trial was made, as ſhe was returning home after being electrified, ſhe perceived with her right eye ſome water collected in a gutter; and the ſame evening was able to diſtinguiſh the light of a candle. The pain in her head ſtill continuing to rage with violence, I then directed three leeches, and after them a bliſter, to be applied to each temple, with the uſe of gentle laxatives occaſionally, as the ſtate of the body required. The joint effect of theſe was not inconſiderable (though but partial and temporary) towards giving relief to the patient for the complaint in her head. But as only the right eye had yet recovered any ſenſibility, and that in a ſmall degree, I then renewed the electric applications, placing the patient on the glaſs-footed ſtool, and taking ſmall ſparks from the integuments ſurrounding the eyes; at the ſame time continuing to paſs the electric ſtream through the eyes themſelves. At the end of three weeks the ſight of the right eye was ſo much reſtored, that with it ſhe could diſtinguiſh large letters. But the left eye during the whole

whole of this time remained totally blind; and the patient was ſtill afflicted with ſevere ſenſations of pain in her head, particularly on the left ſide. Having continued the electric applications near a fortnight longer, without making any viſible advance in the cure, I was almoſt ready to deſpair of their rendering any further ſervice. Yet, unwilling to give up the uſe of means which had already adminiſtered ſo much relief, I determined on a further trial; and accordingly perſevered in the uſe of them ſome time longer. I was happy to find that this perſeverance was not in vain. For, one day whilſt I was taking electric ſparks from the left eye, ſhe ſuddenly exclaimed that ſhe could now perceive a glimmering of light with this eye as ſhe had ſome time before done with the other; and this ſhe imputed to the effect which the electric ſpark then had on a part of the eye which had not before been touched by it. The very next day a great number of objects became viſible to this eye; and from that time there was a progreſſive daily amendment: within a ſhort ſpace of time the ſight of both eyes was perfectly reſtored: as the ſight returned,

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the ſenſations of pain in the head gradually abated, till they entirely ceaſed.

CASE III.

Mrs. S. in February 1784, when ſhe was in her thirtieth year, was brought to-bed; and, being a woman of a healthy conſtitution, choſe to ſuckle the child herſelf. This ſhe did for ſome time without feeling any inconvenience from it; but having continued it for about ſix weeks her ſtrength began to fail, and continued to decline daily, till ſhe became incapable even of moving about the houſe without experiencing a very painful languor. About the ſame time her ſight alſo was affected; firſt only in a ſmaller degree, but afterwards ſo conſiderably that the full glare of the mid-day ſun appeared to her no ſtronger than the light of the moon. At this period of her diſorder no black ſpecks were viſible before either eye, nor did objects at any time appear covered with a miſt or cloud; but the patient being further afflicted with a violent pain in the neck, which ran in a direction

upward to the ſide of the head, on that account the perſon who attended her thought proper to take four ounces of blood from the part firſt affected, by cupping. After this the ſight of the patient was worſe than before, and it was not long before ſhe entirely loſt the uſe of both eyes. She had been three days in this ſtate of blindneſs, when the aſſiſtance of my partner, Mr. Wathen, was firſt called in. On examining the eyes, he found the pupils of both to be very much dilated, and to remain unaltered in the brighteſt light. Mr. Wathen's firſt advice was, that the child ſhould be weaned without loſs of time; ordering, at the ſame time, bark draughts to be taken by the mother three times in the day. He alſo preſcribed an opening medicine, to be taken occaſionally, on account of a coſtive ſtate of body, to which ſhe had been almoſt conſtantly ſubject ever ſince the time of her delivery. With theſe was united the frequent application of the vapour of æther to the eyes and forehead. On the fourth day after this mode of treatment was adopted, I viſited the patient with Mr. Wathen. From the account ſhe gave of herſelf, her ſtrength

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and ſpirits ſeemed to be in ſome degree on the return; and ſhe could then perceive faint glimmerings of light, though the pupils of both eyes were in the ſame dilated and fixed ſtate as before. The uſe of the bark and æther was ſtill continued, and the following day a ſtrong ſtream of the electric fluid was poured on the eyes, whilſt ſeveral ſmall electric ſparks were alſo variouſly pointed about the forehead and temples. The day after this, to increaſe the force of the electrical applications, as it was then thought adviſable, the patient was placed on a glaſs-footed ſtool, that, being thus inſulated, the experiments which had before been tried might be repeated with ſtill greater effect. This proceſs, there is every reaſon to think, had a conſiderable influence towards making a perfect cure. On the firſt attempt it was almoſt immediately followed with ſuch a degree of amendment, that the patient, to whoſe ſight every object had before been confuſed, could now clearly diſtinguiſh how many windows there were in the room where ſhe ſat, though ſhe was ſtill unable to make out the frames of any of them. On the

the third day, ſoon after ſhe had been thus electrified, the menſtrual diſcharge came on for the firſt time ſince ſhe had been brought to-bed, and it continued three days. During that time it was certainly proper to ſuſpend the uſe both of the bark and electricity, which was accordingly done. But no ſooner did the cauſe of the ſuſpenſion ceaſe, than the uſe of both was reſumed: and the effect was every way to our wiſhes; for her ſight now mended daily. At the end of a week ſhe could perceive all large objects; and in a ſhort time her ſight was ſo much recovered that ſhe could read even the ſmalleſt print. Her ſtrength, indeed, was not ſo quick in its return: on which account ſhe was adviſed to remove from town into the country, where the change of air, with the help of a mild nutritious diet, ſoon reſtored her to perfect health in every reſpect.

CASE IV.

Mrs. ———, near forty-five years of age, was attacked with a violent pleuritic diſorder. It continued ſeveral weeks; till at length her ſtrength was ſo much reduced

duced that ſhe became even unable to turn herſelf in bed without aſſiſtance. But before this, and near a month after the commencement of the pleuriſy, ſhe was ſeized with a violent pain in the left eye, which ſhe deſcribed as ſhooting upward to the top of her head, and which was ſoon followed with a conſiderable dimneſs in her ſight. The dimneſs continued increaſing five days; at which period ſhe entirely loſt the uſe of this eye. In the ſpace of three weeks afterwards, a violent pain, ſimilar to that which ſhe firſt complained of in the left eye, attacked the other alſo; and was accompanied with the like ſymptom of ſhooting upward to the top of the head. The ſight of this eye, however, though conſiderably impaired, did not go off ſo rapidly as the other. The dimneſs was ſlower and more gradual in its progreſs; and, for two or three weeks after, ſhe ſaw occaſionally, or at leaſt fancied ſhe did, a number of bright ſparks, which ſeemed to dart ſuddenly acroſs the eye. But in leſs than a month, what remained of the ſight of this eye went off alſo, and ſhe became totally blind of both. On the loſs of her ſight the pain immediately ceaſed. It

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is alſo to be obſerved in the caſe of this patient, that her ſpirits had often been much agitated by painful occurrences;—that for many years paſt ſhe had been ſubject to frequent returns of rheumatic affections in different parts of the body;—and that, in her late illneſs, ſhe had tried the power of many medicines, in conjunction with bleeding by leeches on the temples, and the application of bliſters both to the head and ſide.—Beſides theſe trials of medical ſkill, it was thought proper, during the latter part of her illneſs, that ſhe ſhould be removed into the country to take the benefit of change of air.—The reſult of all was that ſhe recovered her ſtrength: but the blindneſs ſtill continued. In the left eye ſhe had been blind five weeks, and in the right a fortnight, when I was firſt conſulted. On a careful examination of the pupils of both eyes at this time, I found that, though they retained their uſual tranſparency, they were much dilated, ſo as not to be in the leaſt affected by any degree of light. My firſt attempt was with the vapour of vitriolic æther, which I directed her to apply ſeveral times in the day to both eyes. With this was united the uſe of the peruvian

Peruvian bark, two ſcruples of which in a glaſs of white wine were preſcribed to be taken three times in the day. Beſides which, once in that time, a ſtrong ſtream of the electric fluid was to have been applied to the eyes, and continued for about ten minutes or a quarter of an hour. But the perſon employed in the buſineſs of the electricity being unacquainted with the mode of applying the ſtream, ſubſtituted inſtead of it, of his own accord, ſmall electric ſhocks; to which he gave different directions through the head. She had been electrified only three times, and in this way, when her huſband was taken ill, and in a few days died. This melancholy event prevented her from attending afterwards to have the electric applications repeated. It is, however, to be noticed, that it had been found not a little ſerviceable on every trial which had hitherto been made of it; and in particular the laſt time ſhe was electrified, that the operation was no ſooner over than ſhe inſtantly perceived a number of objects near her. The bark and æther were ſtill continued as at firſt ordered; and in about two months the pupils returned to their

natural ſize; and ſhe recovered a ſight ſufficient to enable her to read common letters with the left eye, and to ſee all larger objects with the right.

REMARKS.

As it will not, I preſume, be doubted by any who are made acquainted with the caſes above related, that they furniſh direct and no inconſiderable proofs of the great uſe of electricity in the treatment of the Gutta Serena, I therefore beg leave to avail myſelf of the opportunity which theſe inſtances afford, to recommend the trial of this now too much neglected mode of practice, I mean electrical applications under all ſimilar complaints. It is but a few years ago when electricity was held in ſuch high eſtimation as to be deemed a ſovereign ſpecific for the removal of almoſt all obſtructions in the human frame. Accordingly, at that time, recourſe was had to it in moſt diſorders of this kind, where the more eaſy as well as common methods of cure did not ſpeedily take effect. In conſequence of its being then ſo generally practiſed, it is not to be wondered

wondered at that many inftances occurred in which it failed of fuccefs. But this, I apprehend, has been often owing rather to an injudicious ufe of it, either in cafes to which it could not apply, or in the manner of ufing it, than to any want of efficacy in the nature of the remedy when properly applied, and where it was at all likely to be of fervice. It feems therefore to have been without any fufficient reafon, notwithftanding all the difcouragements with which it was attended in fact, and which were thought to make againft it, that the practice of electricity has of late fo much funk in its reputation as to be almoft wholly laid afide. The fuccefs I have met with in the ufe of it very much confirms me in the opinion I have always entertained, that under proper direction it may be rendered of confiderable ufe. This opinion is grounded on the fubtile and active nature of the electrical fluid, which of itfelf ftrongly points out the peculiar propriety of applying it in affections of the nervous fyftem; and under which clafs of diforders it has been fo often tried with the happieft effects: and in incipient cafes of the Gutta Serena, of which

I am now led more directly to ſpeak, I have known it, under the management of different profeſſional men, as well as in the courſe of my own practice, to be followed with very remarkable ſucceſs *.

But, after all, conſiderable as the relief is which electricity has been found to afford in many inſtances of this diſorder, yet it is not to be expected that this, any more than other remedies, ſhould equally ſucceed in all ſuch caſes. It is always to be remembered that the cauſes of the diſorder are various, ſome of which are, from their very nature, incapable of being removed. In proof of this, beſides the inſtances which have occurred under my own inſpection, many authors might eaſily be quoted; but it ſhall ſuffice, at preſent, to refer only to

* An eminent phyſician of this city who has paid particular attention to the effects produced by electricity in medical caſes, informs me he has found its application more ſtrikingly uſeful in caſes of the Gutta Serena when this diſorder has been produced by lightning than when it has come from any other cauſe. He lately related to me two caſes brought on in this way, in both of which electricity proved ſucceſsful, and very ſpeedily reſtored the patients to their perfect ſight.

one, I mean Bonetus, who, in his Sepulchretum Anatomicum, lib. i. ſect. 18, has given us ſeveral ſuch caſes; in four of which, after the deceaſe of the patients, the real ſtate or true cauſe of their diſorders appeared to be as follows:—in one, the blindneſs was found to be occaſioned by an encyſted tumor weighing fourteen drachms, which was ſituated in the ſubſtance of the cerebrum, and preſſed on the optic nerves near their origin:—in a ſecond, by a cyſt, containing a conſiderable quantity of water, and lodging itſelf on the optic nerves, at the part where they unite:—in a third, by a caries of the os frontis, occaſioning an alteration in the figure of the optic foramina:—and, in a fourth, by a mal-formation of the optic nerves themſelves. Now, in all theſe inſtances, and others of the ſame kind which might be adduced, it muſt be evident that the cauſes of the diſorder were ſuch as lay beyond the power of art to reach *.

* Maitre Jan had ſo formidable an idea of the Gutta Serena, on account of the cauſes from which he apprehended it to proceed, that he pronounced it to be, in every ſtate of the diſorder, and at all times, incapable of a cure. *Traité ſur les Maladies de l'œil*, p. 253.

But while, in the cafes now referred to, thofe caufes were afcertained on diffection, which could not be known while the patient was living, and which fhewed the malady to be in itfelf altogether irremediable, it muft not pafs unnoticed, that others alfo have occurred, in which, upon opening the fubject, and after the clofeft infpection, nothing was to be difcovered, either in the ftructure of the eye, or in the then ftate of any of the component parts contributing to the faculty of vifion, which could at all obftruct the performance of their proper offices. In thefe inftances the failure or imperfection of fight was accounted for by fuppofing fome defect in the optic nerves, though not difcoverable, and which, however occafioned, difqualified them for conveying the images of objects through the eye to the brain: and this was thought to be the only folution which could be given of the difficulty.

I have beftowed not a little attention on the cafes of fuch fubjects as thofe laft defcribed, and am led, by reflecting on them, to hazard a conjecture as to one caufe, which, at the fame time that it feems fully

equal to the production of every apparent effect in the disorder now under consideration, does yet make so very little difference in the appearance of the parts affected from that which they commonly have after death, as may easily escape the notice even of those who have acquired no small skill in anatomical investigations.—The cause I mean, is a dilatation of the anterior portion of the circulus arteriosus;—which, I think highly probable, has been the cause of the Gutta Serena, in not a few of the instances of which no particular account has been given; and especially in those cases where the blindness has been accompanied with an inability of moving the upper eyelid. In the appendix to my Remarks on the Ophthalmy, the first edition of which was published in the year 1780, I inserted a case of this last kind which received a perfect cure; and since that time I have met with several similar instances. But here some explanation may be necessary.

By the term *circulus arteriosus*, anatomists understand an arterial circle, surrounding the sella turcica, which is formed by the carotid arteries on each side of this

prominence, by branches paſſing from them to meet each other before, and by other branches paſſing backward to meet branches from the baſillary artery behind.

My meaning will perhaps be better underſtood by the following fuller deſcription. At but a little diſtance from the points where the carotid arteries enter the cranium through the petroſe canal which opens by the ſide of the ſella turcica, each artery ſends off a branch paſſing in a ſtraight direction forward till it has reached a little beyond the part where the optic nerves unite, whence it proceeds, and in a direction inclining towards a branch from the oppoſite artery, which it uſually joins, and with it forms the anterior portion of the circulus arterioſus. It is to this portion of the circulus arterioſus to which I here principally refer; and concerning which it is very material to be noticed, that its ſituation is directly over the optic nerves, which it croſſes, lying in cloſe contact with them. Very near to theſe firſt branches iſſuing from the carotid arteries is a ſecond ſet, I mean one on each ſide, taking their direction backward for the purpoſe of meeting other branches from the

baſillary

baſillary artery, with which it is alſo uſual for them to unite; thus forming the poſterior part, and completing the whole of the circulus arterioſus. It is yet further to be obſerved, that exactly in the ſame manner as the anterior branches of the carotid arteries croſs the optic nerves and lie in cloſe contact with them, ſo the poſterior branches of this artery croſs and connect with the nervi motores oculorum.—Now, as it is well known that all the arteries of the human frame are, from their texture, liable to no ſmall variations both by contraction and dilatation, ſhould a more than common degree of the latter at any time happen to take place with reſpect to both, or either of thoſe portions of the circulus arterioſus which I have been deſcribing, it muſt then be plain to every one who is at all converſant with the ſubject, that the nerves ſeverally connected with theſe parts muſt, in proportion to the degree in which they are dilated, ſuffer by compreſſion from them. The dilatation of an artery being, however, not always equal in every part even of the ſame artery, it is evident that the compreſſion, which is the effect of it, muſt, as to its extent,

tent, be determined by that of the former, which is its proper cauſe. Should then the dilatation take place in the poſterior portion of the circulus arterioſus, ſo as to compreſs the nervi motores oculorum, the conſequence will be, that the eyelids, and probably the eyes alſo, will loſe the power of motion. But if the dilatation happens in the anterior portion of the circulus, as the compreſſion will then be on the optic nerves, the ſight muſt of courſe be deſtroyed. And ſhould the dilatation take place in both portions ſo as to occaſion a compreſſion both on the optic nerves and the nervi motores oculorum at the ſame time, while the eyelids will hereby be rendered immoveable, the eyes alſo will be deprived of ſight and motion together. For ought we can pronounce, but a ſmall degree of preſſure on ſuch tender and exquiſitely ſenſible parts as thoſe we are ſpeaking of, may produce all theſe dire effects. But, however that be, it ſeems not a little to favour the opinion now advanced, that moſt of the perſons I have ſeen who have been attacked with the united ſymptoms of blindneſs and falling of the upper lid, have been,

like

like the girl whoſe caſe is above referred to (p. 21), both young and plethoric; and ſuch ſubjects appear much more likely to ſuffer from an undue dilatation of the blood-veſſels than thoſe of a different habit. I am further informed by ſurgeons who have reſided in hot climates, that perſons, after much fatigue, when the blood is likely to be moſt rarified, and the veſſels through which it paſſes of conſequence moſt dilated, have not unfrequently in ſuch a ſtate of body been attacked with ſudden blindneſs, without any apparent defect or diſorder in the eyes; and that the cure of ſuch patients has generally been accompliſhed in a ſhort time by bleeding, bliſtering, purging, and the application of volatile remedies to the eyes: in which inſtances, as well as the former, it ſeems not a little probable that the blindneſs was occaſioned, in the firſt inſtance, by a dilatation of the blood-veſſels within the cranium.

Beſides the blood-veſſels of which I have been ſpeaking, there is another not yet noticed, the dilatation of which may alſo eſſentially affect the ſight. I mean that veſſel, the courſe of which lies directly through the centre

centre of the optic nerve to the retina;—a branch of which alſo paſſes through the vitreous humor, till it reaches the capſule of the cryſtalline lens. The dilatation of this veſſel I have often ſuſpected might be the cauſe of blindneſs in ſuch inſtances where it has come on ſuddenly, and in which, though all objects placed directly before the eye were totally inviſible, there has nevertheleſs remained ſome ſmall ſenſe of light, ſo as to give a confuſed perception of objects ſideways. In ſuch caſes, it is to be noticed, that the pupils are ſeldom much dilated; notwithſtanding which, they admit of very little variation of ſize in different degrees of light.

A dilated pupil is conſidered by moſt authors as a ſymptom peculiarly characteriſtic of a Gutta Serena; and I have obſerved it to be a common attendant in moſt of thoſe caſes in which electricity has been found ſerviceable. Many other inſtances of blindneſs are, however, continually occurring in which, inſtead of a dilatation, a contraction of the pupil is the only change which takes place in the appearance of the eye. In caſes of the latter deſcription, the obſtruc-

tion

tion in the ſight is uſually preceded by ſevere pain: and the original cauſe of theſe ſeveral effects may be an internal ophthalmy, if prevalent in any conſiderable degree: and they are not unfrequently accompanied with viſible opacity in the cryſtalline capſule. In caſes thus circumſtanced, electricity admi-niſtered in different ways has alſo ſometimes been of advantage. But there is a medicine which in many inſtances has proved its ſu-perior as well as more certain efficacy, and which I muſt therefore greatly prefer to all external applications whatever. The medi-cine I am ſpeaking of is the corroſive ſub-limate, which in the new diſpenſatory is called hydrargyrus muriatus. Of this I would recommend a quarter of a grain as a quantity proper to be taken for a common doſe; which I have found to agree beſt with the ſtomach when firſt diſſolved, as Van Swieten directs, in half an ounce of brandy, and to be then taken in a baſon of ſago or water-gruel. For young patients ſome abatement muſt be made in the quan-tity of the doſe according to their age, and it ſhould be continued with as few intermiſ-ſions as the conſtitution will admit for a

month

month or ſix weeks, and even longer, if found neceſſary.

I muſt alſo add here, that in ſeveral inſtances of the common Gutta Serena, I have lately known conſiderable relief to be obtained by the uſe of a ſnuff compounded of ten grains of Turbeth mineral (in the new Pharmacopœia called hydrargyrus vitriolatus) well mixed with about a dram of the pulvis ſternutatorius; or, in place of that, the glycirrhiza vel ſaccharum commune. A ſmall pinch of this ſnuff taken up the noſe is found to ſtimulate it very conſiderably; ſometimes exciting ſneezing, but in general producing a very large diſcharge of mucus. It will hardly admit of a doubt, that the benefit derived to the patient from the uſe of this ſnuff chiefly depends on theſe its immediate effects, which have been juſt pointed out: though, at the ſame time, it is not improbable that ſome particles of the mercurial preparation, which enters into the compoſition of this ſnuff, may make their way to the minuter veſſels connected with the part affected; their action on which may alſo not a little contribute to the promotion of its efficacy. Applications of the kind laſt

mentioned

mentioned in cafes of the Gutta Serena have the concurring teftimony of many authors both antient and modern; and fome of them fpeak of the chief ingredient in the fnuff above defcribed, which is Turbeth mineral, as particularly adapted to give relief in cafes of this nature. Mr. Boyle, in his works *, relates a cafe in which this one ingredient was fingly adminiftered in its full ftrength by an empiric at Paris, and was attended with aftonifhing fuccefs. It is, however, to be noticed, that in this inftance it operated moft violently in the feveral ways of vomiting, purging, fweating, falivating, and alfo caufed the head to fwell to a very large fize. I have been a witnefs to the efficacy of the fame application in feveral inftances in which, being given in its compounded ftate, the Turbeth mineral was fo far covered, or its potency reduced, that it was followed with no fuch violent effects as in the cafe related by Mr. Boyle. Of thefe inftances of its fuccefs which have come within my experience, the two following are fo remarkable and fatisfactory,

* Boyle's works abridged, vol. i. p. 103.

that

that I ſhall relate the caſes at ſome length.

CASE V.

W. W. a ſhipwright in the King's Yard at Woolwich, about forty-ſix years of age, in the year 1784, received a violent blow on the right eye, which it inſtantly deprived of ſight. A very conſiderable inflammation enſued, which was ſoon followed by a ſimilar diſorder in the other eye. The inflammation in the left eye went off in a ſhort time, without leaving any perceptible bad effects; but that in the right eye continued, and was attended with extreme pain many weeks; and when at length it abated, the eye ſtill remained totally blind. The ſight of the left eye continued perfect until nearly three years had elapſed after the accident above mentioned. It was then attacked with a dimneſs which ſlowly but uninterruptedly increaſed, until, in about twelve months from its commencement, this eye, as well as the other, became ſo blind that the patient could ſcarcely diſtinguiſh the difference between

day

day and night. In this melancholy ſtate he remained eighteen months; at the end of which I was conſulted by him for the firſt time. I found, on examination, that the pupil of the left eye was much dilated, and its ſize unalterable in the brighteſt light. It was alſo clouded with a ſlight opacity; but this, when conſidered alone, was inſufficient to account for the patient's total blindneſs. The pupil of the right eye was contracted almoſt to a point, and this point was compleatly opaque, and turned upwards from its central poſition, ſo as nearly to touch the outer margin of the cornea. From the inſpection of the caſe, together with the account I received of its progreſs, it was evident that there was no poſſibility of recovering the ſight of the right eye; and the blindneſs had continued ſo long in the left eye, and the diſorder ſo exactly anſwered to the idea we uſually entertain of a fixed Gutta Serena, that I gave the patient no encouragement to expect any relief. Being deſirous, however, to try the effects of a mercurial ſnuff, compounded in the proportion of one part of Turbith mineral with five of liquorice powder, I preſcribed it for him,

and recommended him to take a pinch of it every night before he went to bed. After this consultation I heard nothing more from him for about six weeks. He then called on me again, and gave me the following satisfactory information. The first three times he used the snuff it made his nose bleed for about ten minutes. After this the hæmorrhage did not return any more, but each time the snuff was taken it occasioned the discharge of a considerable quantity of pituitary mucus. He had taken the snuff only eight days before he perceived with his left eye the motion of his fingers; and in eight more could distinguish them one from another, and also some large chalk marks which were drawn on a dark-coloured door. His sight after this became daily more clear, until at the time I saw him, he was able to walk, without any assistance, from his dwelling-house in the town to his work in the yard, and, when there, to employ himself in many different parts of the business of ship-building.

CASE

CASE VI.

Mrs. B. a corpulent but healthy woman, about twenty-eight years of age, received a violent cut on the fore finger of the right hand from a butcher's cleaver; which, as might be expected, was followed with a profuse bleeding. In consequence of the fright and pain which this accident occasioned, she fainted, and continued in that state almost an hour. When she came to herself she had still a very severe sensation of pain, which in a few days caused an inflammation over the whole hand, and threw her into a high-fever. At that time her head ached violently;—her eyes, though not inflamed, were the seat of much pain;—and the sight of them so much impaired, as to make both the patient and her friends very apprehensive on that account. The surgeon, who was first called in, was then of opinion that the dimness of sight, so much complained of, was nothing more than the necessary effect of the fever, the reduction of which was therefore the

first object of his attention. With this view he prescribed the usual febrifuge draughts; at the same time not neglecting those outward applications which he judged proper for the inflamed hand and finger. But this method of treating the case, however likely to succeed, was in fact found to give no relief either for the complaint of the head or eyes: the pain in the one, and the dimness of the other, continuing the same, without the smallest abatement. When she had continued in this state for a week, the further advice of a physician was required; who, besides the use of other internal remedies, thought it material that she should be blooded with leeches on the temple. Accordingly, as soon as they could be procured, three were applied on each side. This bleeding seemed to do more for her relief, as to the pain of the head, than all that had been prescribed before. For, from that time, her head became much easier; nor was she afflicted with the same pain, at least to any degree of violence, during her confinement. At present, however, she was far from being benefited in her sight by any thing which had been done. For the remainder of the

day in which the leeches were uſed, her dimneſs continued much the ſame; and, though ſhe ſlept well that night, yet, to her great aſtoniſhment, when ſhe awoke the next morning, ſhe found that inſtead of being merely dim ſhe had now totally loſt the ſight of both eyes. This then was the complaint to which the attention of the faculty was now confined; remedies having been found for the previous and concomitant ones, which had accordingly ſubſided. In the courſe of the two following months various attempts were made for the recovery of the patient's ſight, by the uſe of means, ſome more, and others leſs, common; but which, whatever inſtances of ſucceſs they might have been attended with in other ſimilar caſes, in the preſent were found inſufficient to give any laſting relief. Once, indeed, during theſe applications ſhe thought ſhe perceived a picture which hung againſt the wainſcot at about the diſtance of ſeven feet from her. This, however, whether real or imaginary, was little more than a momentary impreſſion; for, neither at that time, nor at any other, was ſhe able even to diſtinguiſh ſo much as the light of the

window. Among other methods of cure which were made uſe of, ſhe had been three times electrified by Mr. Lowndes, in St. Paul's Church-Yard; who, as directed, applied the electric wind to both eyes, and drew ſmall ſparks from the temples and integuments ſurrounding the orbit. But, ſlight as theſe electrical applications were, yet ſo extreme was the timidity to which the patient was conſtitutionally ſubject, that ſhe was not to be prevailed on to ſubmit to a repetition of them. Whatever hopes, therefore, might have been entertained as to ſucceſs from this quarter, they of courſe were now given up. On account of a violent pain in the ſide, ſhe was blooded, and bliſtered on the back: which I paſs without further notice than to ſay, that though they ſucceeded, as were to be wiſhed, for the removal of the complaint to which they were immediately directed, ſtill the blindneſs remained, and ſeemed as fixed as ever. On the 28th of November, 1787, my partner Mr. Wathen firſt ſaw her. He found the eyes at that time to be wholly inſenſible of light, and the pupils widely dilated. From the view he took of the caſe, he ſaw no ground of hope

for

for a cure:—ſtill, however, as it was incumbent on him to try whether any thing could be effected by the uſe of means, he preſcribed the application of a large bliſter to the head;—a pill containing one eighth part of a grain of corroſive ſublimate to be given her twice in the day;—and a ſmall pinch of ſnuff, compounded of two grains of Turbith mineral with a ſcruple of the pulvis ſternutatorius, to be taken frequently. On the 5th of December I attended the patient. On that day ſhe deſcribed ſome appearance like that of the tables and chairs in the room, which ſhe fancied was before the right eye; but ſhe ſaw no object with a degree of clearneſs to make her certain what it was. She was under this uncertainty even as to the light of a candle; nor could ſhe be ſure of the difference between day and night. On enquiry I found that the pills and ſnuff had been regularly taken as preſcribed; but that the bliſter for the head, which had alſo been ordered, was not yet applied. The effect of the ſnuff, a pinch of which ſhe took three or four times every day, was to excite violent fits of ſneezing, which were followed with a conſiderable diſcharge of mucus from

the noſe. I ſaw the patient a ſecond time on the 13th of December, and was then happy to find that ſome further progreſs was made in the cure: for ſhe now told me the colour of my handkerchief; though, in order to determine concerning it, ſhe was under the neceſſity of viewing it in one particular direction, to which ſhe could not ſo eaſily adjuſt her eye. At that time ſhe alſo diſtinguiſhed a wine glaſs ſtanding on the table: —and, being placed before the window, diſcovered the motion of ſeveral perſons who were walking on the oppoſite ſide of the ſtreet; but theſe laſt mentioned objects being more diſtant, ſhe was ſtill unable to diſtinguiſh one from another as they paſſed. She continued the uſe of the ſnuff and pills regularly from the time of this viſit to January the 26th following; on which day I ſaw her again, and found the ſight of the right eye to be ſtill improving, and that in no inconſiderable degree: but the left eye remained yet totally blind. The dilatation in the pupil of this eye was obſtinate and undiminiſhed; nor had the brighteſt light the leaſt effect in producing an alteration. It was now judged neceſſary to increaſe the

potency

potency of the ſnuff; for which purpoſe one additional grain of the Turbith mineral was mixed with each ſcruple of the pulvis ſternutatorius. On the 13th of April following, the right eye was ſo far recovered as to diſtinguiſh every object that was placed before it; when ſhe had alſo ſo far the uſe of the left as to diſcern, and with ſome degree of clearneſs, the opening and ſhutting of my fingers. The pupil of this eye was ſtill much dilated as before; nor was that of the other yet reduced to its ordinary ſize. As lately as March 17, 1789, the ſight of the right eye continued perfect: but that of the left had received very little amendment. The patient then wiſhed to decline the further uſe of remedies altogether, being perfectly ſatisfied with the degree of ſight ſhe had recovered *.

ARTICLE

* Since the preceding paper was written, I have been informed by Dr. De Valangin, that he has long been in the practice of preſcribing the Turbith mineral as a ſternutatory, and has found it of diſtinguiſhed uſe in many diſorders both of the eye and ear. He recommends to mix it with ſugar, and in the proportion of one part of the former with three of the latter. In order to be more exact in the uſe of this remedy, I have lately accuſtomed myſelf

ARTICLE XV.

Obfervations on certain Herpetic Affections, attended with painful Irritation.

BY J. C. LETTSOM, M. D.

Read DECEMBER 31, 1787.

HAVING been repeatedly confulted on account of a difeafe which is always extremely painful, and fometimes by mifmanagement rendered fatal, I prefume to fubmit a few remarks on the fubject.

myfelf to prefcribe one grain of the Turbith mineral to be mixed with eight grains of pulvis glycyrrhizæ vel faccharum commune; and one fourth part of this powder to be fnuffed up the nofe once or twice in the courfe of the day. And in thofe cafes where the nofe has been peculiarly dry, I have rendered the powder more effectual, by directing the patient to inhale the fteam of warm water into the nofe previous to the ufe of the fnuff.

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The firſt ſpecies of affection which I ſhall remark, is attended with a violent irritation, and almoſt irreſiſtible itching in the anus, which I have obſerved chiefly in the male ſex, and moſtly occurring in the decline of life, though not univerſally, as I have ſeen the complaint among the middle aged. 'It happens to perſons who have been liable to eruptions on different parts of the body, eſpecially of the herpetic kind; and to perſons liable to arthritic complaints. It does not appear dependent upon aſcarides; it is uſually increaſed at nights by the warmth of the bed, and then becomes ſo inſupportable, as to oblige the miſerable object to riſe frequently to ſeek ſome eaſier ſituation, or to divert the attention from the moment of torment.

From all that I have obſerved, it does not appear to be otherwiſe dangerous than by preventing of ſleep and increaſing debility, thereby producing dyſpepſia, or ſimilar affections.

It more frequently appears as a preventive of other diſeaſes, as I have known perſons variouſly indiſpoſed for a conſiderable lapſe of time relieved as this diſeaſe came on and augmented.

augmented. A gentleman of ſixty-eight years of age, who had long laboured under ſpaſmodic affections, and particularly of that ſtricture in the organs of reſpiration, and fluttering intermiſſion of the pulſe, concomitant in the angina pectoris, was perfectly relieved of theſe ſymptoms as this pruritus came on. One about the ſame period of life, who had for upwards of three months had ſevere vertigoes, and ſtrong ſymptoms of approaching apoplexy, with the aura epileptica which often precedes a fatal fit, totally recovered from theſe alarming indications of fatality by the ſupervention of this pruritus.

A worthy friend of mine, about ſixty-three years of age, whoſe conſtitution had been much debilitated and broken down by repeated attacks of the gout, was at length relieved by an attack of this pruritus. I endeavoured to convince him of the ſalutary effects of this new affection. His patience being exhauſted after ſome months ſubmiſſion to my advice, he requeſted his apothecary to attempt the removal of this painful ſenſation; and a ſtrong ſaturnine preparation was applied to the part affected,

which

which for a few days afforded ſome relief, but before the week had elapſed, as he ſat in his chair with his family, he ſuddenly expired.

The part affected in the pruritus has been carefully examined by ſurgeons, without the appearance of much local diſeaſe: ſometimes a little redneſs has been obſerved, or a ſlight eruption of the herpetic kind; but in general not more than might be produced from ſcratching this place, from which it is impracticable wholly to refrain. The diſeaſe is totally different from the piles, and exiſts with or without any hæmorrhoidal affections; it is, however, more liable to ariſe from their ſuppreſſion. Though I would ſtrenuouſly diſcourage the local application of repellents or aſtringents, ſo intolerable is the irritation, that ſome means of alleviation ought to be adopted; and thoſe which my experience can ſuggeſt I ſhall communicate.

The body ſhould be kept ſoluble by the leaſt irritable laxatives, ſuch as ſulphur, magneſia, caſtor oil: by mineral waters of the ſulphureous or ſaline kinds, as thoſe of Aix

la Chapelle, Harrowgate, Jeſſop's Well, Cheltenham, &c.

Sometimes I have adminiſtered the following alterative pills for a week or two, with advantage.

℞. Calomel. levigat. gr. ſs.
Sulphur. aurat. antimon. gr. j.
Extract. cicutæ, gr. iij.
Syrup. ſimp. q. s. fiat pilula, omni nocte ſumenda per hebdomadem unam vel alteram.

In ſome caſes, eſpecially when any ſyphilitic eruption had formerly appeared, the irritation has been mitigated by the following remedies, with the cautions due to the ſtrength of the reſpective patients:

℞. Mercur. corroſiv. ſublim. gr. iiſs. ſolv. e ſpirit. ſalis marin. gut. iij. et adde aquæ cinnam. ten. ʒx. m. cap. gut. xxx. bis de die e decocti luſitanici, ℥iv.

℞. Antimon. crudi pp. (in nodulo ligati) ℥j.
Lapid. pumicis pulv. (in nodulo lig.)
Radic. chinæ.
——— ſarſaparill. ā ℥ſs.

Nuc.

Nuc. jugland. integror. cum hilis et
putaminibus contuſ. no. x.
Aquæ ℔ iv. decoque ad medias, et
cola, colaturæ adde, tinct. ſtomach.
℥j. m. fiat decoctum luſitanicum.

As repellents and aſtringents appear to me dangerous, I have ordered, with ſafety and ſome relief, a decoction of hemlock and poppy heads to be uſed as a fomentation; or applied in the form of a cataplaſm; or a lotion made of a diluted ſolution of the cauſtic alkali.

Above all, perhaps, nothing contributes more effectually to alleviate the diſeaſe than a light farinaceous and aceſcent diet, long and ſedulouſly purſued.

If, however, the uneaſineſs is ſtill very urgent, I have ordered iſſues in one or both thighs, in order to divert the acrimony to another channel.

Beſides the parts affected with this ſpecies of irritation already deſcribed, I have occaſionally met with inſtances of its attacking the fauces and throat internally, and thereby exciting a cough reſembling the ſpaſmodic or convulſive.

Opium

Opium joined with antimonials, which produce a determination to the ſurface of the body, are particularly indicated with the alterative plan already recommended; but ſcarcely any means prove more certainly and ſpeedily efficacious than a bliſter to the back or anterior part of the neck, kept open as a drain in duration proportioned to the continuance of the diſeaſe; or the inſertion of an iſſue in the arm, thigh, or leg, as before recommended, which, in a caſe now before me, has relieved a gentleman totally, whoſe life had afforded a continual ſcene of miſery for twelve preceding months.

The other affection I ſhall introduce is peculiar to the female ſex, as it is a pruritus in vagina, but it is accompanied with the ſame intolerable itching of the part affected. It occurs in thoſe of delicate irritable habits, eſpecially from the age of twenty to thirty, in unmarried women, to the married who have had no children, and to the ſex, indiſcriminately, about the time of the ceſſation of the menſes: it does not appear to depend upon any diſpoſition to leucorrhœa in either period;

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at leaſt I have known it to occur without ſuch previous diſeaſe. I never ſaw it produce the furor uterinus where I have been conſulted.

In the period of celibacy, ſea-bathing has been particularly beneficial; and the remedies recommended for the pruritus ani may be tried. I have uſed the topical application of ſaturnine preparations with ſome advantage, but never with injury: the conſtitutions have generally been of that delicate frame as to diſcourage bleeding. I have known the internal uſe of bark ſerviceable after the exhibition of the alteratives before mentioned; but when the diſeaſe occurs about the time of the menſes ceaſing, occaſional bleedings, of three or four ounces at a time, prove of obvious benefit; at the ſame time a careful attention to a light diet, and moderate in quantity, at this period, is peculiarly adviſable in a ſex whoſe ſedentary life precludes the neceſſity of ſtrong nouriſhment.

Though the affection thus curſorily noticed is not attended with a ſhadow of fatality, yet it renders the ſex inconceivably miſer-

able, whoſe delicacy makes them frequently exerciſe a patience in ſuffering unknown to the other. I have known the irritation to be ſo intolerable, as to induce the patient to deny herſelf the pleaſures of mixed ſociety; for the efforts to ſmother the diſeaſe not unfrequently excite violent hyſterics, with a mixture of epilepſy.

ARTICLE XVI.

Remarks on the Angina and Scarlet Fever of 1778.

BY JAMES JOHNSTONE, M.D. &c.
WORCESTER.

Read DECEMBER 6, 1790.

SOON after Midſummer 1778, we heard of the ſcarlet fever and ſore throat being epidemical and very fatal in Birmingham. In the autumn I ſaw ſeveral patients labouring under it: theſe were chiefly in the neighbourhood of Stourbridge, and in a tract of country which communicates with Birmingham, and runs from Dudley to Belbroughton, and in the pariſhes of Kinver and Enville: later in autumn we were viſited by it in Kidderminſter; and many fa-

milies were affected with it in the country about Cleobury.

As this diſeaſe much agrees with the ulcerous ſore throat deſcribed very accurately by the excellent Drs. Fothergill, Huxham, and others: from which the Scarlatina Anginoſa of Withering, ſo far as it relates to the hiſtory and courſe of the diſeaſe, does not materially differ; I ſhall not be particular in enumerating the ſymptoms of this diſeaſe, but refer to the writers here mentioned.

I only remark, that the ſcarlet eruption was a much more frequent ſymptom and attendant of this diſeaſe than it uſed to be when I firſt became acquainted with it, near thirty years ago, and wrote upon 1779. The patient's fever and dangerous ſymptoms generally ran high, in the proportion as the efflorefcence was more or leſs diffuſed, and of a deeper eryſipelatous red colour.

The patient for the moſt part vomited, and was purged on the firſt day of ſeizure; the effloreſcence appeared on the ſecond, and about the fourth day began to diſappear; though it ſometimes both appeared later and continued longer. The palate and glands

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of the throat were intenſely red, and ſwelled in the ſame degree with the face and other parts of the body. White ulcers often appeared from the very beginning on the tonſils, palate, and uvula; and a thin acrid ichor flowed from the eyes and noſtrils. But the ulcers and this ichorous running was more generally obſervable about the third or fourth day, or later. And when the diſeaſe took a favourable turn, health began to return after the ſixth or ſeventh day; if otherwiſe the patient died about that time.

I do not propoſe to give a full hiſtory of this diſeaſe, but only to record ſuch diſcriminating circumſtances as diſplay its true nature and proper cure. As it has been deemed, by ſome gentlemen, a very different kind of diſeaſe from the malignant ulcerous ſore throat, and of courſe was treated more as an inflammatory, than as a diſeaſe either putrid, or ſtrongly verging to putreſcence; I gave no ſmall attention to this point, and ſhall candidly relate the reſult of my obſervations.

1. As to the natural genus of the diſeaſe, I obſerved that when it entered ſchools, or large families, it generally infected the

whole, eſpecially when the communication was conſiderable, and the houſes ſmall. In ſuch houſes ſome individuals, at their firſt ſeizure, were more or leſs ſeverely attacked with the ſcarlet eruption, with ſwelling, redneſs, and ulcers in the throat; yet others in the ſame family, infected from them and by them, often had the ulcerated ſore throat, without any effloreſcence or eruption on the ſkin. *Vice verſa*, the firſt ſeized ſometimes had the ſimple ulcerated ſore throat only; and yet others infected by them had the more ſevere attack of the diſeaſe, of fever and ſcarlet eruption, as well as ſore throat. It has conſtantly been ſeen in this neighbourhood, and will be generally obſerved wherever the diſeaſe prevails, that in both forms it is infectious; and that the infection acts as it does in all other contagious diſeaſes; ſometimes in producing the diſeaſe in its fulleſt form and deſcription, and ſometimes in giving it only partially and mildly: thus we found the Scarlatina Anginoſa often infecting ſome with a mere ulcerous ſore throat; and, in others, the Scarlatina Anginoſa conveyed by a mere ulcerous ſore throat: a proof this, that the nature of the diſeaſe is

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the ſame in both theſe forms, and differs only in degree, and in difficulty to the phyſician and danger to the patient. Juſt as it happens that a perſon receiving the virus from a perſon who has a diſtinct ſmall pox, has often a confluent ſmall pox, and *vice verſa.* It is needleſs to illuſtrate ſo obvious a fact by producing a greater variety of parallel caſes. Obſervation then ſufficiently determines that the Scarlatina Anginoſa and ulcerous Angina mutually produce each other by infection; the nature of the diſeaſe is thereby in a conſiderable degree aſcertained, and a fixed point is obtained from which obſervations may be taken with advantage, and a proper judgment and uſe made of the obſervations of others.

It has been diſputed whether this diſeaſe ſhould be treated as an inflammatory, or as a putrid diſeaſe; thoſe who held the former opinion have not appeared to act conſiſtently with it, and thoſe who held the latter may not always have rightly diſcriminated and varied the treatment which particular caſes and ſituations required. I ſhall endeavour to relate, with candor, the reſult of obſervations made with much attention and cau-

tion: what I obſerved to be hurtful, and what I found advantageous; in ſhort, what conduct I purſued, and, on a review, would recommend to young practitioners in like circumſtances.

This diſeaſe has been ſeen of three different ſpecies.

1. The ſimple ſcarlet fever of Sydenham, in which the fever and eruption are moderate, and the throat neither much inflamed nor ulcerated; this of itſelf is a very mild diſeaſe, and, if the patient is neither overheated by food or medicine, nor pent up in a foul cloſe air, nor confined to his bed, he ſoon recovers. But I remark in Sydenham's treatment of this diſeaſe, that while he kept his patient cool and temperate in diet and in degree of heat, he ordered abſtinence from animal food, adminiſtered no purging medicine till the diſeaſe was paſſed over; on the contrary he directs every night an anodyne draught, which, with many good conſequences from its ſedative qualities, would diſpoſe to coſtiveneſs; and he did not allow a purge till the diſeaſe had finiſhed its courſe. I think Sydenham's practice in this point, who

who was much diſpoſed to order purgative medicines in feveriſh complaints, deſerves the attentive conſideration of ſuch medical gentlemen who think purgatives indiſpenſably neceſſary, from the beginning, in treating the Scarlatina Anginoſa. Sydenham alſo found a bliſter to the neck often neceſſary in this diſeaſe, and appears to have treated it with equal ſucceſs and ſimplicity.

2. The Scarlatina Anginoſa, in three or four days progreſs, conſtantly ſhews every ſymptom of the higheſt putrefaction, notwithſtanding ſome appearance of inflammation in the beginning; and it is attended with conſiderable danger, if the apparent inflammatory ſtage be not treated with a due regard to the ſtage and ſymptoms of putrefaction, which certainly ſucceed.

3. An ulcerated ſore throat, without ſcarlet eruption, though often a very dangerous diſeaſe, ſeems, however, more certainly curable than when attended with a conſiderable degree of ſcarlet eruption. The ulcerous ſore throat, when not neglected in the beginning, in this country is found eaſily and certainly to yield to the bark, to acids, wine, and an antiſeptic diet. This method,

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long eſtabliſhed by ſucceſsful practice, has lately been ſo fully deſcribed by my ſon (the late Dr. Johnſtone), that I refer to that work, and to what has been wrote by Dr. Fothergill, Huxham, Wall, and in my diſſertation on fevers; and ſhall now only mark the practice which I found moſt ſucceſsful in the Scarlatina Anginoſa, as it appeared in autumn 1778, and this year 1779.

When called in the beginning of the diſeaſe, I order an ipecacuan vomit; I prefer this emetic, in this diſeaſe, to any preparation of antimony, having obſerved theſe laſt were apt to run off by ſtool, and were in ſome inſtances followed by death; whereas a vomit of ipecacuan generally prevented a diarrhœa, which I have ever obſerved in this diſeaſe to be a very dangerous ſymptom; but I deſire to be underſtood, that I do not reckon a lax ſtool or two in a day ſuch a diarrhœa as can produce danger; but it ought not to be allowed to go farther. And, in order effectually to ſecure my patient from having his ſtrength ſunk by this evacuation, I always order a mild opiate to be given conſtantly after the operation of the vomit.

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I give ſometimes half an ounce of Syr. è Mecon. Sometimes a dram or more of Elix. Paregoricum in ſmall cinnamon water, with a little Spiritus Nitri dulcis, for this purpoſe. If the fever continues to run high about the fourth or fifth day, if the throat be ſwelled or ſloughed, and the head heavy and loaded, I again repeat the ſame vomit and ſedative draught, and generally find the feveriſh heat, the foulneſs of the throat, and head-ach, much abated by it.

In the firſt ſtage of the diſeaſe I order cooling demulcent ſubacid drinks, eſpecially if the efflоreſcence and heat are conſiderable; I give antiſeptic medicines, but ſuch as are not heating, to abate the ſymptoms of inflammation, at the ſame time they obviate the putrefaction which the diſeaſe falls into. I order Emulſio Communis and Spir. Nitri dulcis. Tinctura Roſarum, lemonade, cold water with a toaſt, every half hour, or as often as it is requiſite or agreeable to drink; and the Succus Limonum nearly ſaturated, ſo that the acid may prevail; or the following medicine to be taken to the quantity of two ſpoonfuls for a doſe every third or fourth hour.

℞. Decoct.

℞. Decoct. Cort. Peruv. ℔ſs. Myrrh. ℨi.
Succi Limonum. rec. expr. ℥iſs.
Sacch. alb. ℥i. f. Miſtura Antiſeptica.

The patient is ordered to receive into the mouth and throat the vapour of myrrh and vinegar, and to gargle it often with a gargle of Tinct. Roſar. ℔ſs. Spir. Sal. Marin. ℨſs. Mell. Roſar. ℥ſs. m.

If the patient is at any time ſeized with diarrhœa, I order a doſe of Pulv. Sudorif. Doveri, at bed-time; or a draught like the following, to be given once or twice in the twenty-four hours.

℞. Pulv. Ipecac. gr. i. C. Caſcarill. ℈ſs.
Aq. Cinnamom. ℥i. Syr. è Mecon. ℨii.
Elix. Paregor. ℨſs. m. f. hauſt.

If the diarrhœa be conſiderable, the vegetable acid is omitted from the bark antiſeptic mixture, and ſome Gum Arabic, Spirit. Nitri dulc. and Elixir Paregoricum, are ſubſtituted inſtead of it.

I order the patient always to get out of bed in this ſtage of the diſeaſe, and require them either to ſit in large well-aired rooms, and, *in houſes where theſe cannot be had, and the ſeaſon*

ſeaſon will allow, I enjoin their being much in the open air.

The immediate effects, and the remote conſequences of this I find ſo happy, that I apprehend an attention and conformity to it never fails to render the diſeaſe mild, and to carry the patient happily through. The fever, the intenſe redneſs, head-ach, and anginous ſwelling, are very wonderfully relieved by removing the patient to an open window, or by carrying him out into the open air. And the cool open air ſeems as truly a ſpecific antidote to the miſchief of the poiſon of the Scarlatina Anginoſa as it is in the ſmall-pox. And, in the eruptive ſtage of the former as well as the latter, its good effects are moſt conſpicuous.

This might be eaſily accounted for, when it is conſidered that we are perpetually throwing out from the lungs, by every expiration, a conſiderable quantity of putreſcent exhalation, which particularly ſtriking the parts about the fauces, determines the fomes to act there with particular force. Hence pure air, by carrying off this mephitic vapour more perfectly, will act as a powerful antiſeptic.

antiſeptic. But it is from the obſervation of the happy effects of a pure and temperate air, and not from theory, that I recommend it ſo earneſtly in this diſeaſe; for, when thus uſed from the beginning, it will contribute more than every thing beſides to the patient's recovery.

In the advanced ſtages of the diſeaſe, the bark, in ſubſtance, will be a neceſſary addition to the antiſeptic mixture.

Fixed alkaline ſalts I have not given, and do not recommend. I know no decided ſucceſs which recommends their uſe, no facts of an unequivocal kind which do not mark their unfitneſs in putrid diſeaſes; and ſuch I think this clearly to be. In the uncertainty of art and ſcience, I ſhall truſt the inſtincts of nature: theſe direct to acids, to fruits, to cooling diluent liquors, in this and all continual fevers, and give, at the ſame time, an averſion and horror to animal food, and every thing of an alkaleſcent nature and tendency.

After the ſeverer attacks of this diſeaſe, the weakneſs induced by it, and the action of the poiſon taken up by abſorption from the

the ſkin, frequently obſtructed the lymphatic veſſels and glands, ſo as to occaſion a leucophlegmatia, or aſcites, after the fever was removed; which made evacuating, and particularly diuretic as well as ſtrengthening medicines neceſſary to remove theſe conſequences.

ARTICLE

ARTICLE XVII.

Of the Lepra Græcorum.

By WILLIAM FALCONER, M.D.F.R.S. & C.M.S.

Read March 23, 1789.

The Lepra Græcorum, although in this part of England (at leaſt) it be no uncommon diſeaſe, is ſeldom deſcribed by medical writers from their own experience. Doctor Cullen * ſays he never ſaw it; and ſcarcely any other modern accounts that I have met with appear to be taken from actual obſerva-

* De Elephantiaſe Leprâ Framboeſiâ a Trichomate utpote morbis a meipſo nunquam viſis amplius ſtatuere non auſus ſum. *Genera Morb. Cullen*, p. 295. Note. Edit. 1780.

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tion. The Bath Hoſpital affords numerous opportunities of ſeeing this diſeaſe, as the waters have been famous from the earlieſt times for the relief they give; and it is from the patients of the Bath Hoſpital that the following account is principally, though not altogether derived.

Deſcription of the Leproſy.

The appearance which the leproſy puts on, is that of large blotches on the ſkin, generally of a round or elliptical form, which appear in various parts of the body, but principally on the legs, arms, forehead, and breaſt.

Theſe blotches are of different ſizes, from that of a ſhilling to one conſiderably exceeding that of the hand. Theſe are covered with a rough eruption which is at firſt red, and in its progreſs becomes white, at leaſt it is ſo in ſome parts, and ſcaly; though in ſome patients it becomes ſcaly ſooner, and to a greater degree than in others. This eruption is, in ſome, nearly level with the ſkin, and in others it is more prominent, even to nearly half an inch above the ſur-

face; which laſt is more common when the leprous eruptions put on a white ſcaly appearance, than when they remain of a red colour. It is in general dry, though not uncommonly moiſt, and oozing a thin ſerous fluid. The parts affected are ſometimes rather ſwelled, but not to any conſiderable degree, nor are they in an oedematous ſtate. The ſwelling is moſt common when the eruption is of the moiſt kind. When it puts on a ſcaly appearance it is often very uneaſy to the feeling, and even rather painful; but this ſeems to ariſe principally, if not altogether, from the hardneſs and ſtiffneſs of the ſkin, which renders motion troubleſome. The ſame circumſtance cauſes the outſide of the ſkin to be inſenſible to ſlight impreſſions of the touch, but no real inſenſibility of the part affected, or of thoſe adjacent to it, has been obſerved. The breath has been remarked to be rather ſhort in the moiſt kinds, eſpecially in perſons advanced in years; but I am not certain that this was produced by the diſeaſe. The appetite, ſleep, and ſtrength of the patients have not been apparently affected; and there is very rarely any thirſt or fever attending it.

The body is in general coſtive, but not to any great degree, and what ſoon yields to common cathartics. This complaint we have no opportunity of ſeeing in its firſt ſtage; but it is ſaid to begin with ſickneſs, and a ſenſation of weight and oppreſſion at the ſtomach, which is relieved by vomiting; after which, in a few days, the eruption appears in different parts of the body, and ſometimes on the head, in form of pimples with white heads, attended with great itching. Theſe ſometimes ſpread, and diſcharge a thin corroſive humour; at others they riſe and incruſt the parts over with a rough ſcaly coat, not unlike the bark of a decayed tree. Nothing very particular appears to attend the amendment of the patients. The ſcaly and rough parts fall off gradually, and are not ſucceeded by freſh eruptions; the itching abates, and in time the ſkin appears again in a natural ſtate, as before the diſorder commenced.

Cauſe of the Leproſy.

I have been able in numerous inſtances to trace the cauſe of this diſeaſe to a circum-

ſtance ſo general, that I doubt not it is, if the truth could always be diſcovered, univerſal. I mean here the ſudden application of cold to the body when in a heated ſtate. This commonly happens from the drinking ſome cold liquor; but this is not peculiarly neceſſary to produce the diſeaſe, as I have ſeen it ariſe from the external application of cold. It matters not in what manner the body be heated, whether by heat of fires, rooms, or by exerciſe, as cold produces the ſame effects in all the above caſes. Hence ſuch perſons are eſpecially liable to it whoſe ways of life ſubject them to ſuch viciſſitudes; as ſmiths and other trades, that oblige thoſe who work at them to be near fires, or in heated rooms; and ſuch as uſe violent exerciſe or labour, as huntſmen, porters, and ſuch like, who are too apt to indulge their appetites without caution.

Women, in ſituations where they are expoſed to the ſame ſudden changes of temperature, are liable to the ſame diſeaſe, as cooks, laundreſſes, &c. ſeveral of whom I have ſeen in the Bath Hoſpital affected as above deſcribed. It is proper to obſerve, that the danger is much leſs in thoſe who

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take cold liquors at the time they are heated with exercife or labour, if they continue to purfue their labour for fome time after drinking, than if they leave off their work immediately. Thofe cafes that I have feen were of perfons who expofed themfelves when at reft to the effects of cold. The fame obfervation holds equally true of cold externally applied. The quality of the liquor drank is, I believe, of lefs importance than the temperature. I have known the difeafe to have been produced by the drinking of water, milk, and beer, and I doubt not many other liquors, if cold, would do the fame. Whether ftronger liquors of the fermented kind, or fuch as are warmed by aromatics would be equally dangerous, if drank cold in fuch circumftances, I cannot determine.

On the Cure of the Leprofy.

I wifh I were able to point out a remedy with as much certainty as I think I have difcovered the caufe of the difeafe. The Bath waters, indeed, externally applied feem to be of more fervice than any other reme-

dy; but even theſe ſometimes fail, and, when they ſucceed in apparently clearing the body of all marks of the diſeaſe, it is found by experience that no abſolute dependence can be had on ſuch ſeeming abatement of the diſeaſe, as it is apt to recur after ſome time; and upon this account it is cuſtomary, in regiſtering ſuch patients, not to put them down as *cured*, but as *cleanſed* only. Inſtances however often happen wherein ſuch patients remain free from the leprous eruption for ſeveral years, and ſome have never experienced any return of it at all, though they lived many years afterwards. The obſtinacy of the diſeaſe is by no means proportioned to the quantity of the eruption. I have often ſeen patients with the face, and many parts of the body, almoſt covered with a white prominent ſcaly cruſt, that have been perfectly cleanſed in a few weeks, whilſt others that had only a few red blotches that projected but little from the ſkin, found no alteration of much conſequence in a trial of ſeveral months.

I have ſeen many medicines given internally in this diſeaſe to aſſiſt the efficacy of the Bath water; but I am rather doubtful if the

the efficacy of *any* is much to be depended upon, farther than as regards the relief of ſome of the concomitant ſymptoms.

Mercurials, as calomel, have been given to two, three, four, and five grains at night for three days ſucceſſively, and carried off by a purgative given on the fourth day, and this courſe repeated every week for ſeveral weeks together, but, as far as I can find, without any remarkable good effect. Decoctions of the woods of ſarſaparilla and of mezerion have been given at the ſame time, but without much effect. Plummer's pill and the pilul. Æthiopicæ have alſo been adminiſtered, but I believe with little advantage. The acrid mercurial preparations have been much in uſe in this diſeaſe. The ſolution of corroſive ſublimate, both that in water and that in ſpirits, have been given and continued a long time, and joined with decoction of the woods and of ſarſaparilla. I am inclined to think that ſome conſiderable advantage muſt formerly have been believed, at leaſt, to have been produced by the uſe of ſuch preparations, as the name of *guttæ ad lepram* was affixed to a ſolution of this kind in the old Pharmacopœia of the hoſpital;

and I have been told by persons whose observation I could not but respect, that in some obstinate cases they had seen much advantage from such a course continued for some time. I cannot however affirm the same from my own experience, though I do not mean to deny it altogether. Mercurius calcinatus, joined with an opiate, and given at night for some time, has also been tried, and I believe with much the same success.

Mercury is also used in external applications, as in the unguentum e mercurio precipitato, and in the unguentum citrinum; but I have not seen any good effects they have produced.

Antimony has been often used, as in the form of essentia antimonii, and in a powder composed of crude antimony and the compound powder of gum tragacanth, but with no advantage as far as I can learn.

Sulphur also has been used internally, as in the aqua sulphurata, which indeed is no other than the phlogisticated vitriolic acid combined with water, and in form of flowers made up into an electuary, but with no effect worth recording.

Sulphur also has been used externally

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made up into an ointment with hog's lard, and ſometimes with tar; but I think that the ſimple tar ointment ſucceeds better, and in ſome caſes appears to be of real uſe in ſoftening the ſtiffneſs of the ſkin, and promoting the ſeparation of the ſcaly eruptions. Elm bark in decoction, ſo juſtly recommended by Dr. Lyſons in a diſeaſe that reſembles this ſo nearly as to appear to external view to be only a lower degree of it, is in this diſeaſe of little efficacy. The tincture of cantharides, ſo highly commended by Dr. Mead for its efficacy in the leproſy, has not anſwered to ſuch a character in the trials I have ſeen made of it. I have ſeveral times tried it without being able to perceive any effect worth remarking from it. It never, in my experience, ſeemed to ſhew any effect as a diuretic.

The method in general purſued is, to order the patients to bathe twice or thrice a week, according to their age, ſtrength, and other circumſtances. This, after a few times trial, commonly cauſes an abatement of the itching, and an incipient deſquamation of the leprous eruption, and of conſequence renders the ſkin ſofter and more pliable.

This

This courſe is accompanied with a direction to drink the waters, which at a medium are taken in the quantity of about a pint daily, which are thought to ſecond the good effects of the bath, by promoting an eaſy and gentle perſpiration. If the amendment appears to proceed according to expectation, no other medicines are given, but ſuch as are ſomewhat gently opening occaſionally, if the body ſhould be coſtive.

In caſes where the eruption either ſhews no ſigns of abatement, or where, after being removed in one part, it breaks out in another, and a ſucceſſion of the eruptions is kept up, though in general in no great quantity, recourſe is had to the acrid mercurial preparations before mentioned, which, it muſt be owned, coincide very well with the uſe of the warm bath, which aſſiſts their diaphoretic powers, and obviates any tendency towards a ſalivation; but whether ſuch medicines act ſpecifically on the diſeaſe, or really contribute to its cure or abatement, I cannot take upon me to decide with poſitive certainty.

It now and then happens that this complaint, although from appearance almoſt entirely removed,

moved, will continue in that ſtate without any farther amendment, reſiſting every remedy for a long time, and at laſt oblige us to diſmiſs our patients, generally indeed in a much better ſtate than at their coming in, but ſtill without even a temporary removal of the diſeaſe. It ſometimes (though I believe but ſeldom) happens that the ſame cauſe (the ſudden application of cold), which originally produced the leprous eruption, will cauſe it to ſtrike in; and when this occurs it produces great diſturbance in the ſyſtem. I have before mentioned that vomiting was a ſymptom that generally, if not always, preceded the eruption at the commencement of the diſeaſe; and when the eruption is ſtruck in, this ſymptom again makes its appearance. A profeſſional gentleman of eminence, who attends this hoſpital, mentioned to me a caſe of this kind, that fell under his own inſpection; and a very remarkable inſtance occurred to my own obſervation: A girl about ſixteen years of age, who had at the time a leprous eruption upon her, drank, when violently heated, a large draught of cold water, preſently afterwards the leprous eruption ſuddenly diſappeared,

peared, on which ſhe was ſeized with a perpetual diſpoſition to vomiting; every thing ſhe ſwallowed was in a few minutes rejected. For this complaint ſhe was ſent to the Bath Hoſpital. Her health in other reſpects was not much affected, ſave what the fatigue of ſtraining, and loſs of ſtrength by the want of ſufficient ſuſtenance, produced. A variety of remedies were tried, both external and internal. Beſides the Bath waters, both drank and uſed as baths, ſhe tried opiates, bitters, aromatics, elix. aloes, the effervеſcing ſaline draught, ipecacuanha in ſmall doſes, and a multitude of other medicines. Opiates alſo were externally applied to the ſtomach, and bliſters, but all without the leaſt effect.

After a ſtay of ſeveral months ſhe was diſcharged no better; and about eight months afterwards was again re-admitted, the diſorder having then taken a different turn. The vomiting had ceaſed; but her limbs and body were almoſt univerſally convulſed, though without loſs of the ſenſes. She again uſed the waters in every form, and a great number of other medicines and local applications; but after ſeve-

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ral months was again diſcharged without receiving any benefit.

It appears probable to me, that the ſcurfy redneſs of the face which we ſometimes ſee among females, and which is to them ſo great an object of dread, is nearly allied to this diſeaſe. We know that it generally, if not always, owes its origin to the ſame cauſe, the drinking of ſome cold liquor when the body is violently heated, which often happens from dancing and public amuſements. We alſo know how dangerous it is to the health to repel ſuch eruptions; and I recollect a caſe that fell under my care about twelve years ago, wherein an almoſt perpetual vomiting was induced by the uſe of an external application, adviſed to repel an eruption of this kind that appeared on the face. This however, after continuing above ſix weeks, was at laſt cured. Other diſorders of a dangerous nature have been brought on by remedies uſed for the ſame purpoſe. I once ſaw a dropſy of the breaſt produced by the uſe of a mercurial remedy for a redneſs of the face, which it effectually removed, but inſtantly produced a dropſy of the cheſt, terminating in death.

The

The number of perſons admitted into the Bath Hoſpital for this diſeaſe in the ſpace of four years, viz. from June 12, 1771, to June 12, 1775, and their ſtate when diſcharged is as follows:

Whole number admitted - - - -	83
Of whom were cleanſed - - - -	52
Much better - - - - - - - -	24
Died of the ſmall pox - - - - -	1
Irregular in behaviour, and diſcharged without a ſufficient trial of the waters	2
State in which they were diſcharged omitted in the regiſter - - - -	4
	83

ARTICLE

ARTICLE XVIII.

Case of Epilepsy successfully terminated.

By J. C. LETTSOM, M. D. &c.

Read JANUARY 7, 1788.

WILLIAM ROUTLEDGE, a young man, twenty-six years of age, who resided in the neighbourhood of Stratford in Essex, was desired to consult me by English and Furnass, eminent practitioners in that town.

This he did on the 19th day of November 1787, when he gave me the following account of his indisposition:

About four years ago an acquaintance of the patient's laboured under epileptic fits, whom he attended as a friend, and assisted in

in holding, when under the paroxyſms: They impreſſed the mind of my patient with conſiderable terror; and at length he fell into the ſame ſtate himſelf. From the frothing at the mouth, the falling into convulſions, and the loſs of ſenſe during the fits, there remained no doubt that they were epileptic. They uſually came on at their early commencement about once in three weeks or a month, and then laſted from one to three hours each attack: they have ſince gradually increaſed in frequency, and diminiſhed in duration; and when he conſulted me the attacks were not leſs in number than two or three a week, but rarely continued longer than half an hour.

It is unneceſſary to dwell here upon the fixed and mechanical cauſes of epilepſy, moſt of which, it is well known, cannot be removed, and conſequently the diſeaſes under ſuch circumſtances are irremediable.

There are however two ſtates of the conſtitution connected with epilepſy that are curable, although theſe ſtates appear exactly oppoſite.

The *firſt* I ſhall ſpeak of is the plethoric, where there may be a general fulneſs of blood,

blood in the whole habit, and from this general conſtitution the head in common partakes; or, what I conceive to be more frequently the caſe, where, from ſome peculiar conformation of the body, and more eſpecially of the head and neighbouring parts, a partial determination of blood is thrown upon the brain.

The cure here muſt depend upon depletion: but what are the moſt effectual means of producing and preſerving this depletion? Bleeding from the ſyſtem is perhaps the moſt ſpeedy and certain means of leſſening the volume and impetus of the blood; but it has been found that venæſection gives a tendency to the ſyſtem to ſanguification, on which account topical bleeding adjacent to the head has been preferred.

A ſeton, or iſſue, ſeems alſo calculated to take off determination to the head; and affording at the ſame time a permanent remedy, is well adapted to the purpoſe.

But as no external means of depletion can be long effectual, without attention to the food taken, a ſpare diet of vegetables in particular, with farinaceous liquids, have been recommended. The diet upon which

 the

the quantity and conſtitution of the blood ſo much depends muſt hence appear a primary object of attention. I think however this mode of taking nouriſhment may be altered both to the benefit and pleaſure of the patient. In ſuch conſtitutions I have allowed even animal food and wine, under certain reſtrictions, in preference to plentiful diluting liquids. Meat of any kind is allowed, though ſparingly, and wine in the ſame manner; but drinking freely of the ſmalleſt liquids, even water, is cautioned againſt, under an idea, derived from obſervation, that dilution promotes repletion and ſanguification; thus an ounce of meat diffuſed in one pint of water, will produce a larger quantity of blood than if the ſame quantity of ſolid food were diffuſed in a quarter of a pint; and I would rather indulge the patient with a glaſs of wine alone, than a glaſs of wine and a tumbler of water: by this means I have ſeen a more ſteady and ſecure depletion maintained, than by admitting large quantities of diluted liquids, without ſolid food.

At the ſame time this depletion is further promoted by laxative medicines, which not

only

only produce emptineſs by evacuation, but by the ſtimulus on the inteſtines, take off determination to the head.

The *ſecond* ſtate of curable epilepſy I mean to introduce here, is that of Atonia; and taking the former reaſoning as well founded, the treatment of this ſtate will be readily inferred; and diet, medicine, exerciſe, and purſuits encouraged, which tend to ſtrengthen the debilitated ſyſtem.

In the caſe which I have already deſcribed, which I conſidered of this kind, I ordered the following preſcription:

℞. Vitrioli Albi ℈ſs.
Aquæ Puræ ℥ix.
Aq. Nucis Moſch. ℥ſs.
Syr. Balſam. ℥i. M. ft. Hauſtus, mane ſumendus primo, tertio quoque die.

℞. Pulv. Cort. Peruviani ℥i.
—— Valer. Sylveſtr. ℥ſs.
Limatur. Martis pp. ℥ij.
Syr. è Cort. Aurant. q. ſ. Ft. Elect. de quo ſumat magn. Nucis Moſchatæ bis per diem.

 ℞. Pil.

℞. Pil. Rufi ℨiſs.
Vitrioli Albi ℨſs. M. ft. Pilul. xxx.
capt. ij. om. nocte.

This was ordered on the 19th of November; and on the 3d of December the patient called upon me, and informed me, that he had not had any return of the fits: he complained, however, that the morning draught produced violent vomiting, which induced me to ſubſtitute a milder emetic of five grains of ipecacuanha, to be taken only twice in the week: the electuary and pills were continued. Towards the concluſion of December he again called upon me to inform me of the continuance of his health.

There are doubtleſs various other means of promoting the vigour of the ſyſtem, both from the vegetable and mineral kingdoms; but, as the firſt preſcription was ſalutary, I had no occaſion to attempt any other formula.

ARTICLE

ARTICLE XIX.

Caſe of Imperforated Anus ſucceſsfully treated.

BY T. MANTELL, DOVER, SURGEON & C.M.S.

IN A LETTER TO J. C. LETTSOM, M. D. &c.

Read JUNE 1, 1789.

DEAR SIR,

As it is well known by ſurgeons, that, in *common* caſes of imperforated anus, they are in general eaſily relieved by a ſimple puncture; it is alſo underſtood from the writers who have mentioned ſuch imperfections, "*That, where there is no mark or veſtige* "*of an anus perceptible*," it is almoſt impoſſible to be relieved either by the efforts of nature or art.

If the following caſe is thought by you worthy of obſervation, I beg leave through your medium to preſent it to the Medical Society.

Mrs. S——— was delivered of a female child in September, 1786. A few days after I was informed, that no proper evacuation of Meconium had taken place, and that ſome ſmall quantity of fæces had come away with the urine. On examination I found that a mal-formation was the cauſe, there not being any anus, or the leaſt appearance of one. The infant, in other reſpects, was well formed: the vagina was perfect, and the water paſſed naturally by the urethra; the health of the child was bad; ſhe appeared generally in great pain, was very coſtive, and, by violent forcings, a little quantity of hard fæces were driven out, in the form of ſmall ſpiral ſtrings, per vaginam.

On acquainting the parents with the danger of the caſe, and propoſing, as the only relief, to make an inciſion through to the inteſtine, and by that means endeavour to obtain a natural mode of evacuation; they requeſted me to do whatever I thought proper.

As

As I had no direction by an impulse of the fæces against the skin, I chose the usual natural distance from the vagina, and made a deep but small incision, and, by passing a curved probe by the vagina, through the aperture into the rectum, I soon felt it, and was guided by that to proceed till the discharge of fæces came plentifully through the new aperture; the hæmorrhage was not great, and the child was immediately relieved. To prevent constipation, and avoid pain by the expulsion of hard fæces, I gave laxative medicines, and my young patient felt little inconvenience, though there still continued some small discharge, as before, per vaginam. At the month's end it removed with its mother to town, and I saw no more of them till the spring of 1788, when I was informed by Mrs. S——— that the child had been very unhealthy, that it had suffered from many disorders, and was still troubled (particularly when costive) in voiding the fæces; and that the orifice I had formerly made had been so much closed as to render it necessary for a surgeon to dilate it, and yet it was now again very confined, which made such a constant use of purging

 medicines

medicines neceſſary, as to debilitate the conſtitution of the emaciated little ſubject.

I had formerly been afraid of making the aperture large, leſt, if I did, the powers of retention might be loſt; but there now being a kind of ſtricture at the part, induced me to think the levatores, and ſphincter muſcles were not deficient; and that no miſchief would enſue, if I enlarged the orifice. Accordingly I made a large inciſion, and after this no further difficulties aroſe, the child became healthy, and I have the ſatisfaction of finding, near a year ſince the laſt operation, that ſhe continues perfectly well.

I am, Sir,

Very reſpectfully yours,

Dover,

May 25, 1789.

T. MANTELL.

ARTICLE

ARTICLE XX.

Case of Hæmorrhage and Purple Spots, without Fever, or previous Illness:

By JOHN AIKIN, M.D. C.M.S. &c.

Read OCTOBER 19, 1789.

MISS P———, aged eleven, healthy, but of a delicate habit, had last winter an indisposition attended with slight fever, cough, and loss of strength and appetite, for which she was sent into the country in the spring, and returned much mended. She remained well, till on Sunday evening, August 8, she was taken with an oozing of blood within the mouth, which continued all night. At the same time there was an appearance of

purple ſpots, like flea-bites, about the bend of the arm. On Monday morning ſimilar ſpots appeared on the legs, and the bleeding continued. On this account ſhe was taken to Mr. Turner, ſurgeon, who ſtopt the hæmorrhage by an aſtringent application to the gums. She then went to ſchool as uſual; but Mr. Turner properly recommended the decoction of bark acidulated with vitriolic acid, which ſhe began to take in the evening. She paſſed a good night; but next morning her friends were alarmed with the progreſs of the complaint. The purple ſpots were now very general over the body and limbs; a large blotch, as big as the hand, perfectly black, ſomewhat elevated, and ſore to the touch, appeared on the middle of one thigh; and there was another large black ſpot alſo tumid and ſore, ſomewhat above the inguinal glands on the ſame ſide. Still ſhe ſeemed little indiſpoſed, and ſhe ate a tolerable dinner that day. I ſaw her about three that afternoon; and found all the appearances above mentioned, with a pulſe nearly natural, but a good deal of languor and debility. She had been ſick; and had thrown up a quantity of very black coagulated blood. Her tongue had

had a dark hue; and a kind of cadaverous ſmell might be perceived about her. The decoction of bark was directed to be continued, with a large portion of the tincture of bark, and ſome drops of tinct. opii. Port wine and water, or porter, was ordered for her drink.

The ſickneſs continued; ſhe paſſed a reſtleſs night, with much heat and faintneſs. Next morning I found her very pale, and exceſſively debilitated. Her pulſe was extremely hurried, and beat with a quick jarring ſtroke; her tongue looked livid; the ſpots appeared much as before; ſhe had diſcharged much black matter by ſtool: her appetite was quite gone; and ſhe had ſuch a loathing to the bark, that we were obliged to ſubſtitute to it, the inf. roſarum.

On Thurſday the pulſe was very quick, but weaker, and a ſtrong pulſation was ſeen in the carotids. She was extremely faint and low, which was not ſurpriſing, as her ſtomach rejected every thing, and ſhe ſcarcely took the leaſt of either food or medicine. However, the colour of the ſpots began to be ſomewhat more dilute, and the large

blotches

blotches were leſs elevated and ſore. This night ſhe was more compoſed.

On Friday the ſickneſs was greatly abated, and ſhe reſumed both her drinks and medicines. The ſpots were evidently lighter. From this time the amendment was rapid, and her ſtrength returned as quickly as it had been loſt. On Sunday ſhe had one black and coſtive motion, and ſoon after a natural one. Her urine through the whole had been pale: whence it is probable that the black blood diſcharged by vomit and ſtool had been, in great part at leaſt, ſwallowed during the hæmorrhage of the mouth. On Monday I had the ſatisfaction of finding my patient down ſtairs, and walking about the houſe. Many of the ſpots were quite gone; and the blotches had a greeniſh hue, like a bruiſe loſing its blackneſs. After this ſhe had no complaint. The weather, during the whole of the diſorder, was cloſe and ſultry.

REMARKS.

Every experienced practitioner has, I doubt not, met with inſtances of a diſpoſition to hæmorrhage,

hæmorrhage, attended with the eruption of purple ſpots, apart from fever, or any other diſtinct diſeaſe; but I believe this affection does not frequently appear in the acute form, and exquiſite degree above deſcribed. And I am particularly induced to offer it to the Society, becauſe I do not find in any of the ſyſtems of noſologiſts, that clear and diſcriminating notice taken of it, which a diſeaſe ſo marked, and occaſionally ſo formidable in its aſpect, would ſeem to require. Several of the ſyſtematiſts have, indeed, deſcribed a genus of diſeaſes under the denomination of *purpura*: but this is by all of them placed under the head of *Febrile Diſeaſes*. Now, though we know that ſpots, or vibices, of a purple colour are frequent attendants upon fevers of the putrid and malignant kind, in which they almoſt always portend a fatal termination, yet, in caſes like the preſent, it is evident, both from the origin and termination, that true idiopathic fever makes no part of the complaint. Quitting, then, the claſs of fevers, where are we to look for it in the ſyſtems of noſology? Conſidering the purple diſcolorations as its moſt conſpicuous mark, we might perhaps

haps expect to find the disease under the head of *Ecchymoma*. But in this genus of Sauvages, the species which alone comes near it in description, the *ecchym. vibex* is made only a symptom of preceding acute diseases; and the same may be said of the *vibex* of other authors. Sauvages, however, in his class of *cachexiæ*, has the genus *phænigmus*, which, though defined from a *red* discoloration of the skin, yet contains a species which seems nearly to denote the object of our enquiry. This is the *phænigm petechialis*, or the *purpura apyreta*, of Cusson, characterised by the eruption of *purple* spots on the whole body, without itching, tumour, or other symptom. This affection Sauvages says he has sometimes seen in children, arising from the summer heat, without any remarkable lesion of the functions, and disappearing in a few days from the use of cooling drinks and gentle purgatives. He also quotes Sachsius, as having observed in a woman diffused rose-coloured spots, some of which *wept blood*; and similar ones, without effusion of blood in a child, both of which yielded to *antiscorbutics*. If, however, we compare these cases with that which I have related,

related, it will be manifeſt that the ſymptoms prevailed to a ſo much inferior degree, that they convey the idea of a much leſs alarming diſeaſe. From Cuſſon's well-adapted name of *purpura apyreta* I make no doubt that he intends the genuine diſeaſe in queſtion; but I have not his work to conſult.

Van Swieten, in his *Commentary on Boerhaave, ſect.* 723, giving an account of *exanthemata* in fevers, after he has mentioned thoſe of the moſt malignant nature, denoted by their purple or black colour (which appearance he juſtly refers to a kind of ecchymoſis, or extravaſation of humours), ſays, that in the months of Auguſt and September, 1742, he ſaw ſome patients in Leyden, with ſpots of a black or deep purple colour appearing throughout the whole body, which by degrees changed to a more dilute hue, and vaniſhed. As he did not attend theſe patients from the beginning, he was not acquainted with the other circumſtances of the caſe; but if there had been a *true putrid fever* he could not but have diſcerned and mentioned ſuch a leading circumſtance. Further, he obſerves that many other people of the lower rank were taken with the ſame

 diſeaſe,

diſeaſe, of whom *ſome died:* but, if it had been a genuine purple fever, *ſome* only, and probably *very few*, would have *eſcaped.* Theſe, then, I conſider as inſtances of our diſeaſe; but, if ſo accurate a writer has deſcribed it ſo imperfectly, it is a ſufficient proof, that much is yet wanting to its hiſtory.

Dr. Percival, in his *Eſſay on the Septic Quality of Sea Salt*, quotes from the *Philoſ. Tranſactions*, vol. liii. a caſe in which purple ſpots, with profuſe hæmorrhages ending fatally, were occaſioned in a young lady apparently from the uſe of ſea-water. This, too, was a *non-febrile* diſeaſe.

In the *Edinburgh Medical Commentaries* for the year 1774, a caſe communicated by me is inſerted, of a youth who, after the termination of a ſlow fever, was attacked with a painful ſwelling of one arm, which was covered with dark red and purple ſtains, followed by gangrenous veſications; purple ſpots and blotches appearing at the ſame time on other parts of the body. No general indiſpoſition attended theſe formidable appearances, and the ſkin every where gradually recovered its natural colour, the diſ-

eaſe

eaſe making a ſtand only in the hand and fingers of the affected arm, where it produced a mortification of the ſoft parts, and a deſtruction of the laſt phalanx of two fingers.

I ſhall beg leave to cloſe theſe narratives with a pathological obſervation. It has been a ſort of faſhion of late to account for almoſt every inſtance of a putreſcent and colliquative ſtate of the fluids, on the ſuppoſition of a previouſly debilitated ſtate of the ſolids. Yet various facts ſeem to prove that ſuch a ſtate of the fluids may exiſt as an original diſeaſe, and that the debility of the ſolids may frequently be the effect, not the cauſe. Not to dwell upon the inſtance of ſea-ſcurvy, which is now generally admitted to depend upon a morbid condition of the animal juices, induced in the firſt inſtance by the uſe of ſalted or corrupted food, I conceive that ſome of the caſes above related muſt be accounted for on a ſimilar principle, though the cauſe and nature of the vitiation is not ſo apparent. In the caſe which is the principal ſubject of this article no manifeſt debilitation of either the vital or moving powers occurred till after the appearance of

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the hæmorrhage and purple ſpots: even on Tueſday the appetite was good and the pulſe natural, when the effuſion of the diſſolved blood beneath the ſkin made the moſt frightful ſhow. Further, the debility, when it had begun, went on augmenting, nor was its progreſs ſtopped by food or medicine, of which ſhe took ſcarcely any; yet in this very low condition the hæmorrhage ceaſed, and a re-abſorption of the extravaſated blood took place. After it had appeared by theſe tokens that the blood had in part recovered its healthy ſtate, the ſymptoms of debility went off with ſurpriſing rapidity, and the functions were all preſently reſtored to their natural vigour. It is, I imagine, inconceivable that a perſon walking about, and performing all the uſual actions of life, ſhould at the ſame time labour under ſuch a debility of the extremities of the ſanguiferous veſſels, as that they ſhould be incapable of retaining their contents, eſpecially when none of the excretory organs were preternaturally relaxed. On the other hand, we have daily examples of the utmoſt degree of debility in the animal and vital functions, without any tendency to the extravaſation of

8. blood,

blood, or the unuſual diſcharge of any other humour.

Might not the hæmorrhage from the mouth, and extravaſations, be conſidered as *critical* in this caſe, and the means Nature took to relieve herſelf from an oppreſſive and deſtructive load? Can the ſpeedy recovery be attributed to any thing elſe but ſuch a natural criſis? Is it not analogous to the eruption of exanthemata? Muſt a peculiar *acrimony* of the blood be admitted; or can the whole be accounted for on the ſuppoſition of mere *rarefaction* accompanying a weak ſtate of the veſſels? Theſe are queſtions, the diſcuſſion of which might be uſeful and important, but which the proper limits of this paper, and probably the plan and intentions of the Society, will not admit my entering upon.

JOHN AIKIN, M. D. C. M. S.

Yarmouth, Auguſt 29, 1789.

ARTICLE XXI.

Case of Aneurism, with the Dissection.

IN A LETTER TO J. C. LETTSOM, M. D. &c. FROM W. LUXMORE, OF UXBRIDGE, SURGEON, AND C. M. S.

Read November, 3, 1789.

William Hogg, aged about fifty-two, of a muscular habit, from the day being fine in April, 1788, threw off a winter's garment, and sat under a tree, as frequently was his custom, to amuse himself in reading; very soon after he was attacked with a severe pain on the anterior and middle part of the right thigh; but having always enjoyed uninterrupted health, disregarded it for two or three months. When the pain increasing and extending

tending to the hip, down the ſpermatic proceſs to the teſticle of that ſide, with frequent ſudden and acute paroxyſms, attended with the ſenſation of intenſe heat *like burning*, and his nights becoming very reſtleſs, he applied for medical aſſiſtance; when bleeding (for the attack on the teſticle) and various anti-rheumatic medicines, together with opiates, and the warm bath at nights, ſeemed at firſt to relieve his complaints; but theſe failing to produce any permanent effect, the cold bath was tried to as little purpoſe; a bliſter-plaiſter was then applied to the thigh, which afforded ſome eaſe, but only for a ſhort duration.

About the latter end of October the pains became more ſevere, and though he was tolerably eaſy with the aid of opium, whilſt warm in bed, yet the moment his thigh was expoſed to the air, the pains were excruciating.

About November they began to extend acroſs the loins to the other hip, down the thigh and edges of both tibiæ, with the ſame ſenſations of heat and burning: during the continuance of the pains the parts affected were exquiſitely ſenſible to the touch, as well as to the external air; but the moment

the pains ceaſed, thoſe ſenſations ceaſed likewiſe. The extractum cicutæ was now given by the direction of a very eminent phyſician, in pretty large doſes, and a very large and ſtrong bliſter applied to the loins, which was kept open as long as poſſible, and ſeemed to procure a conſiderable mitigation of every ſymptom: after the bliſter healed, the cicuta was continued, and increaſed to a drachm thrice a day, during the continuance of the ſevere froſt, when he felt very little pain or inconvenience; but the froſt going off, every complaint recurred with redoubled violence, and the pains and burning ſenſation now extended to the back part of his thighs and legs, and neither the cicuta, warm bath, or opium, afforded relief. In this deplorable ſituation, and anxious to be relieved at any rate from this excruciating malady, in March, 1789, he applied to a *certain Urine-Doctor*; but finding every complaint aggravated, after about a fortnight's trial of his medicines, he deſiſted; and was then directed, by the ſame eminent phyſician before mentioned, to other anti-rheumatic medicines, and a repetition of the bliſter on his loins, which the patient imagined

gined had before relieved him: this was made perpetual, and kept open as long as poſſible; and, when it ceaſed to diſcharge, mercurial frictions were uſed on the parts affected, and the doſes of opiates continually increaſed, with laxatives interpoſed.

During the whole period of his illneſs, prior to his application to the *Urine-Doctor*, he regularly attended his avocation (which was that of kitchen-gardener to a noble Duke, no leſs conſpicuous for humanity, benevolence, and other virtues, than his exalted ſtation); had been free from any feveriſh ſymptoms, his appetite moderate (for he was a very regular, temperate man, and much diſpoſed to contemplation), and excretions natural, without the leaſt appearance of diſeaſe in any of the viſcera; but from that period his pulſe became greatly accelerated, and full, with conſtant thirſt, attended with a very painful dyſuria, and his pains and other ſenſations excruciating: for ſeveral days after the apothecary had renewed his attendance, the patient had omitted to acquaint him that this dyſuria had occurred during the courſe of medicines he had lately been under from the *Urine-Doctor*, and he was

greatly ſurpriſed that the lact. amygd. with ſtrong ſolutions of gum Arabic, aſſiſted with emollient injections and fomentations, proved ineffectual to relieve it, and that an iſchuria veſicalis was at hand; finding the feveriſhneſs increaſing, he was bled to about ten ounces, and laxative, nitrous, oleaginous, ſaline medicines freely exhibited, with fomentations, and repeated injections with laudanum; but theſe proving abortive, ſtronger diuretics were adminiſtered, by which a ſmall quantity of urine was evacuated; but the iſchuria returning, the bladder was emptied with the catheter, which paſſed with great facility; and, as no water would now paſs without it, the operation was repeated four or five ſucceſſive days, when an evident relaxation of the ſphincter veſicæ ſucceeded from the quantity of urine that inceſſantly and inſenſibly ran off in twenty-four hours; then the iſchuria, attended with great pain, recurred for twenty-four hours, when about three pints of very deep-coloured offenſive urine were drawn off.—An œdomatous ſwelling of the abdomen, thighs, legs, feet, and right teſtis, now ſucceeded, notwithſtanding there was a con-

ſtant

ſtant *unremitting* diſcharge of natural-coloured urine, of which he was inſenſible; and, whenever he was firſt raiſed to a ſitting poſture, it would *fly* from him in full ſtream. The ſwellings ſoon totally ſubſided, with an entire loſs of motion in the lower extremities, and a conſiderable atrophy of the right; the urinary flux ſtill continued, as did likewiſe the quickneſs of pulſe and thirſt.

The ſenſations he now felt, were—Whenever he ſat, as if on bladders of water, *which occaſion a conſtant rolling*; his feelings, either on preſſure, moving, or handling the lower extremities, exquiſitely painful; but a total inability of motion, at times great pains, and the ſenſation of great heat in the ſpermatic proceſſes and penis, and in the latter an inſenſibility to the paſſage of the urine through the urethra; the loins, hips, thighs, legs, and feet affected with the moſt excruciating pains and intenſe burning ſenſations, though at the ſame time theſe parts were perfectly cool, the patient expreſſing them, *as if roaſting before a very ſtrong fire.*

A copious red eruption now appeared on the thighs and legs, which did not however

alleviate

alleviate his ſufferings; the hæmorrhoidal veſſels diſcharged freely ſeveral days, an evacuation he had never before experienced. As nothing hitherto ſeemed to be attended with the leaſt permanent ſucceſs (for laxatives afforded only temporary relief), tinct. opii ʒij was directed to be taken every ſix hours, with ten grains of calomel every other night, and a laxative every other morning. This courſe was perſiſted in about nine days, when the calomel was diſcontinued, and very liberal doſes of the decoct. cort. cum extr. & tinct. exhibited in the intervals of the opiates; but as the pains and other complaints appeared now to be rather aggravated by the opiates, they were entirely omitted, and the extractum cicutæ, joined to the cortex, increaſed to fifty grains every ſix hours, without producing the leaſt ſenſible effect.

The diſcharge of urine having continued in this inceſſant ſtate for five weeks, at this time *(about a month before his death)* became quite ropy, and a ſurpriſing quantity of mucus was voided with it, in the ſame inſenſible manner, ſo intimately mixed as to be almoſt inſeparable, to the amount at leaſt

of

of ſixteen ounces in twenty-four hours, and of a moſt offenſive ſmell; and the ſtate of his pulſe, after this laſt appearance in the urine, was from one hundred and ten to one hundred and forty.

Appearances after Death, and on opening the Body, about 18 *Hours after he expired,* June 17th, 1789.

On viewing the body, as there was a livid appearance on the courſe of the ureters, we expected to have found the chief morbid affection in them, as well as the kidneys and urinary bladder, eſpecially as the attendant ſymptoms had ſtrongly indicated a great affection of thoſe parts; but on opening the abdomen, and minutely examining its contents, we diſcovered, that the aorta deſcendens formed its *bifurcation* unuſually high above the kidneys; about two inches below this bifurcation on the right ſide, and immediately over the kidney, a conſiderable tumor preſented itſelf, whoſe external and inferior part had the appearance of ſuppuration,

tion, but the ſuperior and interior, towards the ſpine, the colour of the artery in its natural ſtate; the whole evidently within its external coat; the kidney, which was not more than half its natural ſize, and very little diſeaſed, was puſhed by this tumor conſiderably from its ſituation, nearer the ribs; and, on ſeparating this tumor, it was found to conſiſt of a white *pulpy* ſubſtance, tending to oſſification, and the arterial tube almoſt obliterated.—It extended about four inches, and weighed at leaſt three ounces: below this the iliac artery appeared perfect; the tranſverſe proceſſes of the ſpine, and that part of the ſpine itſelf contiguous to the tumor, were quite carious, and two or three of the proceſſes entirely diſſolved; the ureters were rather enlarged, but without any other morbid appearance; the bladder was contracted and quite empty; the ſtomach and inteſtines were replete with flatus, but firm and elaſtic; the liver of its natural ſize and colour; and the gall bladder moderately full; the ſpleen, pancreas, peritonæum, and meſentery, in their natural ſtate; but the omentum had a ſlight morbid appearance.

Upon

Upon the whole then it was obvious that the *Aneurifmatic* tumor above defcribed was the undoubted caufe of the patient's death; and readily accounts for the pain which originated in the thigh, as well as the atrophy of the right extremity, and the relief he always felt (as the colon lay immediately on the tumor) from the operation of laxatives, when fucceeded by copious evacuations, there being no difeafed appearance in the thigh where the pain commenced.

ARTICLE

ARTICLE XXII.

Two Cases of Hydrocephalus.

BY MR. THOMAS JAMESON, SURGEON IN BLOOMSBURY, AND F. M. S.

Read APRIL 15, 1790.

CHARLES HARRIS, aged about one year and a half, had a fair complexion, well-proportioned ſhape, and no bad health, until the end of September, 1789, at which time he was ſeized with a ſwelling of the right ear, and an eruption, with a ſerous diſcharge behind it. After bathing it, and taking two mercurial purges, the humidity gradually decreaſed, with an abatement of the tumefaction until it healed.

On the 9th of November following I found

found him ſeized with a quick pulſe, though his appetite was good, and coſtive habit, which were ſoon after ſucceeded by vomiting, blindneſs, ſtupor, ſleep, a convulſive motion of the right leg, and many other ſymptoms of oppreſſed brain. He was treated with bliſters, laxatives, mercurials, leeches, and, as an inciſor tooth was diſtending the gums, they were lanced; but all without ſucceſs, for he died on the 31ſt of November, which was juſt three weeks from the time of his having been taken ill of the acute diſeaſe.

Catherine Harris, ſiſter to the above, aged eight years and nine months, of a fair complexion, with white hair; the occiput larger than uſual, and therefore over-proportioned to the os frontis; but the ſutures of the head and bregma were oſſified and cloſe; was remarked to have had a very large head when an infant, which was alſo a long time before it cloſed. She had no other ſcrophulous, or ricketty appearances, but enjoyed a good ſtate of health, until ſhe was four years old, when ſhe was attacked with a ſore mouth and violent fever; but from which ſhe recovered in leſs than a month, and remained very well until the 1ſt day of laſt

last December, the time at which I began to attend her.

She complained of ſwelling and heat in her feet and legs, ſucceeded by the ſame ſenſation of heat in her back, and afterwards by a ſoreneſs of the mouth and throat; and then a ſwelling of her lips, with ſoreneſs and tumefaction of the whole mouth, both externally and internally. As an agreeable application I ordered the mel roſæ to be uſed to the mouth, and internally, a purge.

Theſe ſymptoms diſappeared in leſs than three weeks, but were immediately followed by others of a more ſerious nature, which ſhall now be related, in part from memory, becauſe the diſeaſe began like a fever, and I did not make minutes till ſeveral days were elapſed.

On the 22d of December ſhe complained of pain in the front and back part of the head, a weakneſs of the eyes, and had a frequent ſmall pulſe, and fluſhing of the face. A purging draught, with calomel, was given her, and afterwards a ſaline mixture.

23d, The pulſe was quick, the ſkin hot, and the head affected with pain and heavi-

neſs.—The ſaline mixture, with antimonial wine, was repeated.

24, The pain of the head was very violent, ſhe was conſtantly retching, and unable to retain any ſolids or liquids on the ſtomach; on which account ſhe took an emetic, and a cordial abſorbent mixture after it.

25, The vomiting continued, but not ſo frequent as before ſhe took the emetic; ſhe began to ſhew ſome degree of ſtrabiſmus, which afterwards increaſed.

26th, She had a very ſevere pain of the head, with a conſtant propenſity to put her hand to the back part of it; her eyes were weak and drowſy, and ſhe ſlept very much.

As ſhe had been coſtive ſince the purge, a laxative glyſter was adminiſtered, and two leeches were applied to the temples.

27th, The pupils of the eyes were much dilated, and both drawn inwards to the noſe, with great inſenſibility to the light of a candle.—Three grains of calomel were given her in a little abſorbent powder.

28th, A phyſician viſited her, who ordered a purge, with calomel, and a julep of

chalk to abate her retching; which laſt was continued until

The 1ſt of January, 1790, when ſhe became totally blind, with both pupils dilated to the greateſt degree; ſhe was coſtive, conſtantly ſcratching her forehead under the hair, and her vomitings became leſs frequent. A bliſter was applied to the back of the neck, and kept open; a grain of calomel, with three grains of magneſia, were given three times a day; alſo a drachm of mercurial ointment was rubbed on the legs and thighs night and morning, and repeated daily.

3d, The pulſe continued frequent, with all the other ſymptoms increaſing, except the vomiting, which had ſtopped; ſhe was conſtantly picking her noſe, and had a ſpitting of blood.—She was bled at the arm to near ſix ounces, and the mercurial powders, with the ointment, were continued.

4th, The ſpitting of blood increaſed; the blood drawn was not ſizy, but was rather of a ſlender texture.

5th, She had a continued delirium, with blindneſs, and a ſoreneſs of the throat; the ſpitting

ſpitting of blood, which at firſt was very alarming, now abated; and ſeemed to proceed from the mucous membrane of the noſe. She had a continued convulſive motion of the right hand; her mouth and throat were a little ſore, apparently from the mercury, but by no means in proportion to what might have been expected from the quantity exhibited.

6th, A large vein, and the integuments which run acroſs the noſe to the orbits of the eyes were ſo ſwelled as to disfigure her face; her coſtiveneſs continued throughout the greateſt part of the diſeaſe, notwithſtanding her mercurials and laxatives; her urine, during the time it could be procured for inſpection, was generally turbid, whitiſh, and depoſited a mucous ſediment. The former remedies were perſevered in, and another bliſter was applied between the ſhoulders.

8th, Moſt of the ſymptoms were increaſing, attended with a parched ſore mouth, and brown tongue, but with very little ptyaliſm. She now recovered her eye-ſight, but attended with ſo much bodily weakneſs and other ſymptoms as announced a ſpeedy diſ-

 ſolution.

ſolution.—The mercurials were now laid aſide.

9th, She recovered from her delirium, knew her friends, and was heard frequently to ſay her prayers: ſhe had a very quick pulſe, and

On the morning of the 10th ſhe died.

ON DISSECTION

Of the laſt patient, there appeared an enlargement and turgidity of the veſſels of the pia mater; the two lateral ventricles of the brain were alſo enlarged, with about two ounces of water found in each; and the other ventricles likewiſe contained ſome water.

It is worthy of obſervation, in this laſt patient, the difficulty that occurred of producing a ſalivation, for ſhe had uſed a great deal of mercury during the ſpace of ten days; alſo the ceſſation of the ſymptoms before her death.

It is likewiſe to be remarked, that the acute Hydrocephalus was preceded by a ſwelling of the ear, with a diſcharge around it,

it, in one patient, and of the mouth in the other. The ſymptoms throughout were nearly ſimilar, and in the ſame ſucceſſion, in both. It is alſo ſingular, the latter child of the ſame family being taken ill immediately on the death of the former; and both diſeaſes being terminated in three weeks to a day.

ARTICLE XXII.

Experiments made on the Laryngeal and Recurrent Branches of the eighth Pair of Nerves, with a View to determine the Effects of the Division of those Nerves on the Voice.

By J. HAIGHTON.

Read MAY 24, 1790.

NOTWITHSTANDING the ſubject of this paper has engaged the attention of phyſiologiſts from the earlieſt periods to the preſent time, a contrariety of opinions ſtill prevails. This may poſſibly excite our aſtoniſhment, when we conſider that the ſubject is not of very difficult inveſtigation, requiring for its accompliſhment very little more than an unprejudiced mind, and a hand accuſtomed to diſſection.

The

The anatomiſts of the preſent time, however, are by no means agreed whether the recurrent branches of the eighth pair of nerves ought alone to be conſidered as the vocal nerves; or whether the laryngeal branches of the ſame pair do not likewiſe claim a conſiderable ſhare of that office. The advocates for each opinion appeal to experiments.

Beſides bearing my own teſtimony on the occaſion, and endeavouring to prove by a ſeries of experiments, made in rather a public manner, that the recurrent branches are the true vocal nerves; I ſhall likewiſe endeavour to eſtabliſh as a fact, what hitherto has been generally denied, viz. that the voice, when taken away by the diviſion of nerves, may again be reſtored.

But before I requeſt your attention to the experiments on which I reſt my opinion, I muſt firſt beg your indulgence while I lay before you the ſtate of the preſent inquiry.

In this paper then there are two queſtions involved:

Firſt, Are the recurrent branches of the par vagum the true vocal nerves? and

Secondly, Does the voice, when taken away

 by

by a divifion of the vocal nerves, again return?

The moft early accounts of this fubject with which anatomical hiftory prefents us, at leaft fuch as merit our attention, are to be found in the writings of Galen. Indeed before his time this had been a fubject of inquiry with philofophers, which, from the uncultivated ftate of anatomy, had never been inveftigated with much fuccefs. Their ideas were fuch as might be expected from people toiling in the infancy of a fcience in purfuit of difcoveries; and wandering about in the regions of darknefs in hopes of finding a glimpfe of light to guide their future fteps. They imagined that the carotid arteries were fubfervient to the voice, and refted that opinion on an experiment, which, on a fuperficial view, appeared decifive. They made a ligature upon both carotid arteries, and obferved that the animal became inftantly mute. But anatomifts were not long under this delufion; for the remarkable effects produced by this experiment foon awakened their curiofity; and, upon examining with more attention the parts contained

within

within the ligatures, they found that the large nerves, now called par vagum, paſſed between the artery and vein, and were included in them.

Before this time experiments had been inſtituted to prove that the nerves formed the communication between the brain and the different organs; and that they were ſubſervient, though in different reſpects, both to ſenſe and motion. Hence the former experiments were diverſified, ſometimes by making ligatures upon the arteries alone, at others on the nerves; and it appeared that the effects formerly attributed to ligatures on the arteries were only referable to the ſame experiments on the nerves.

Ruſſus, of Epheſus, had the merit of detecting this fallacy, and likewiſe firſt of diſcovering that thoſe nerves, now known by the name of the recurrents, were branches of the par vagum, and were diſtributed to the larynx: no mention however is made of his experiments on theſe branches, but only on the trunk of the par vagum itſelf.

Notwithſtanding the aſſertion of Ruſſus, Galen claims the diſcovery himſelf. He does not admit that his predeceſſors had any knowledge

knowledge of the recurrent branches; but only of the principal trunks: and from the idea which he had formed of their function, he called them the vocal nerves. On which occasion he thus expresses himself: "Vocare "vocales nervos consuevi eos, quos ipse in-"veni; nam preceptores mei eos duntaxat "qui apud arterias sunt, cognoscebant."

But he afterwards adds, that the same changes are induced upon the larynx, whether these vocal nerves are immediately affected, or the trunks which run by the side of the carotid arteries. "Atque idem est "modus quo gutturis musculi læduntur, "sive recurrentes nervi, sive hi qui juxta "arterias sunt, vitientur.—vel incisi, vel la-"queo intercepti." And in another place, speaking in allusion to the experiments of his predecessors, he observes, that, in consequence of tying the nerves accompanying the carotid arteries, an animal loses its voice, and not from any pressure on the arteries alone.

He confirms this doctrine by observations on the human subject. He relates an instance of a boy who had a scrophulous tumour extirpated from the side of the neck by

by an inexperienced ſurgeon, in which half the force of the voice was loſt; alſo another inſtance ſtill more remarkable, in which both theſe nerves were cut through, in attempting to extirpate ſcrophulous tumours, and in which the voice was entirely loſt.

The above experiments have been repeated by ſeveral anatomiſts ſince the time of Galen.

Mundinus, who flouriſhed in the fourteenth century, ſaid: "If the recurrent "nerves of the larynx be cut through, the "animal immediately loſes its voice."

Veſalius has given a deſcription of theſe nerves, and affirms, that a diviſion of them is attended with a loſs of voice. This obſervation merits particular attention, for Veſalius ſeems to have been a determined oppoſer of Galen's doctrines in general, though in this inſtance he agrees with him; from which we may reaſonably conclude, that he had very ſatisfactory proofs of this matter before he acknowledged its truth. But to place this beyond doubt I ſhall cite his own expreſſion. Says he, "Pulchrè auditur, "quàm validam efflationem animal citra

" vocem moliatur, recurrentibus nervis cul-
" tello divisis."

The same thing has been very much insisted upon by Muralto, who has prosecuted this subject. He asserts, that, notwithstanding it has been very much doubted by some anatomists, yet from experiments he is convinced, that the division of these nerves deprives an animal of its voice.

Among the writers of more recent date, Dr. Martin, of St. Andrew's, has pursued the inquiry, and has published a sensible paper upon this subject in the second volume of the Medical Essays of Edinburgh. He bears his testimony in favour of the doctrine of former experimenters, by his own observations: he divided these nerves in a sucking pig of about five weeks old, and found, that when one of them only was divided, the pig lost half his voice, or, as he expresses himself, " it became considerably weaker;" but upon cutting the other, it was entirely lost; though, by the sound of the breath, and the motion of the thorax, it was evident that an attempt was made to produce sounds.

This experiment has been repeated at Paris

ris by Monſ. Siie, who affirms, that the diviſion of recurrent nerves occaſions an entire loſs of voice.

In the Leipſic Commentaries for the year 1755, an analyſis of a very ingenious eſſay is given of the effects of ligatures upon nerves, in which the author* had obſerved, that making ligatures on the par vagum produced aphonia: "Convulſus, nullum amplius, licet tentaret, edidit clamorem."

But, notwithſtanding this perfect agreement of the above writers, their aſſertions have been poſitively contradicted by others.

Drelincourt, who wrote about the year 1680, maintains the contrary: he declares that a dog, upon which he made this experiment, barked afterwards whenever he was ill-treated.

The late profeſſor Monro, reaſoning perhaps from the anatomy of parts, and from the nerves which ſupply the larynx, is inclined to believe that a diviſion of the recurrent nerves will not occaſion an entire loſs of voice, ſo long as the ſuperior, or laryngeal branches of the par vagum remain entire.

* Joannes Henricus A. Brunn.—Gottingæ, 1753.

But

But an eminent teacher of anatomy goes further in this matter. I remember, when I attended his lectures about eleven years ago, he affirmed that he had determined this matter by experiment: upon dividing the recurrent nerves of a dog, his voice was not loſt, but only diminiſhed; and that a diviſion of the ſuperior, or laryngeal, branches became neceſſary to produce a perfect aphonia; and at the ſame time obſerved, that Galen and others had erred exceedingly in maintaining a contrary doctrine.

When a contrariety of opinions prevails on any ſubject demonſtrable by experiment, and when theſe opinions are ſupported by men of the firſt profeſſional character on the ground of actual experiment, I muſt confeſs my own expectations of clearing up this point are not very ſanguine.

Every one who has been much engaged in experimental inquiry will acknowledge the neceſſity of a frequent repetition of experiment, becauſe various cauſes, of which the experimentaliſt had no conception, will contribute to influence the reſult, and render the concluſions doubtful and uncertain.

The doctrines of the above writers, at

leaſt

leaſt ſo far as related to this inquiry, are for the moſt part founded on ſolitary experiments; and every one who has frequently operated on living ſubjects muſt have obſerved, that, when working upon minuter parts, where the animal has been particularly irritable or unſteady, or where much blood has been effuſed, that there has been much uncertainty in the buſineſs, with a great tendency to deception; and in many inſtances it has been found, on examining the parts after death, that the experiment had been conducted contrary to intention. If this be granted, it will be ſufficient to ſhew the neceſſity of repeating, and even of diverſifying, experiments before they can admit of certain and determined concluſions.

The only end I had in view in proſecuting this ſubject was the inveſtigation of truth; and having no preconceived notions, I could purſue the inquiry without apprehending any thing from the miſguidance of prejudice. My firſt attempt was to aſcertain the effects of a diviſion of both the recurrent nerves.

EXPERIMENT I.

A longitudinal incifion being made on the fore part of the neck of a dog, and the fterno-hyoidei and fterno-thyroidei mufcles being feparated from the trachea, the recurrent nerves, which, in the lower part of the neck of a dog run on the anterior and lateral parts of the trachea clofely adhering to it, came into view. I divided them carefully with a lancet; and foon after, upon ftimulating him, he could make no other kind of noife but that of a loud breathing. He was now remanded to his former ftate of confinement, where he had heretofore expreffed great impatience by howling; but, though he frequently made attempts, yet he could never exceed a wheezing kind of noife.

That no doubt might remain in my mind concerning the refult of the experiment, I determined to reft the matter on another teft; therefore the next day, having laid bare the crural nerve, and irritated it feveral times with the point of a lancet, at laft I cut it through. As I had always obferved, that the divifion of this, or the fciatic nerve,

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in common with other nerves going to voluntary parts, extorted howling; this appeared to afford us a very fair teſt of the preſence of voice: but, though he expreſſed pain by ſtruggling and breathing loudly, he never diſcovered any remains of voice.

EXPERIMENT II.

Wiſhing to repeat the laſt experiment with ſome diverſification, I divided the trunks of the par vagum themſelves, inſtead of the recurrent branches.—The diviſion was made about the middle of the neck, and of courſe ſome diſtance below the part where the laryngeal branches are ſent off. In this inſtance alſo, as well as the former, the voice was entirely loſt.

Having occaſion to divide the par vagum in two other dogs, for a different purpoſe, I took the opportunity of examining the ſtate of the voice, and the reſult in theſe caſes correſponded very exactly with my former experiments.

Conceiving that I had now ſufficiently aſcertained the loſs of voice from the diviſion of the recurrent nerves, and alſo from the trunks

trunks of the par vagum from whence they originate, I wiſhed to know what changes would enſue from a diviſion of only one of them.

EXPERIMENT III.

I divided one of the trunks of the par vagum about the middle of the neck, as in the former experiments, and found, upon putting his voice to the uſual teſts, that it ſtill exiſted, but conſiderably weaker than natural. At firſt I thought he was ſomewhat hoarſe; but, in a few days from the experiment, it approached to the natural pitch, but conſiderably fainter than before.

Being now ſatisfied concerning the effects of dividing the recurrent nerves, or the par vagum, about the middle of the neck, I wiſhed to aſcertain the conſequences of cutting through the laryngeal branches of the par vagum, as ſome anatomiſts have imagined it contributed very much to the formation of the voice.

EXPERIMENT IV.

Another dog being procured, and a longitudinal incision made on the anterior and superior part of the neck, I exposed the upper part of the sterno-hyoideus muscle, and separated it from its attachment to the os hyoides, by which means, and by a little careful dissection, this nerve came into view. After making it distinct, and disengaging it somewhat from the surrounding parts, I cut it through as near to the par vagum as I possibly could. The same operation was performed on the opposite side. Upon examining the effect of this experiment on the voice, it was several notes flatter, though not much altered in its strength, and continued nearly in the same state.

That I might not be deceived in this experiment, I examined the parts carefully after death, and found the nerves had been divided agreeably to my intention.

From hence it appears that the recurrent branches of the par vagum supply parts which are essentially necessary to the formation of the voice; whilst the laryngeal

branches of it ſeem only to affect its modulation or tone.

As the experiments already related ſufficiently evince the facility of deſtroying the voice of an animal, it remained to determine whether the voice, when once taken away by the diviſion of nerves, ever returned.

EXPERIMENT V.

I divided the other trunk of the par vagum of the ſame dog which had been the ſubject of the third experiment, at the diſtance of ſix weeks from the diviſion of the firſt. This occaſioned a total loſs of voice; and he continued entirely mute for about a fortnight. About this time I thought his voice was beginning to return, which really happened in a few days afterwards; but the pitch of it was ſharpened almoſt an octave. In this ſtate it has remained about ten months without any evident change ſince it firſt returned, except in its ſtrength, which is increaſed.

This laſt circumſtance of the recovery of the voice may perhaps deſerve ſome attention when we conſider how univerſally this

poſition

poſition has been denied. I have not been able to find in phyſiological writings any inſtance of it; but there are ſeveral experiments related, where the loſs of voice was permanent. In Dr. Martin's paper publiſhed in the Medical Eſſays of Edinburgh, he obſerves, that he kept a young pig ſeven or eight weeks after its voice had been taken away by a diviſion of the nerves, without perceiving any ſymptoms of its return.

Monſ. Siie confirms the aſſertion of Dr. Martin by experiments made on two dogs, which he kept ſeveral months afterwards; but in neither of them did he perceive any thing of returning voice.

Notwithſtanding the recovery of the voice is ſo generally denied, anatomiſts in every age have been very well aware of the communication of the recurrent nerves with the laryngeal. This communication was known to Galen, who even formed an opinion from it, that the voice ought to return ſome time after it had been loſt by experiment; but he has not been able to produce one inſtance where it really happened. Other anatomiſts ſince Galen have adopted his opinion, but without any ſupport from facts.

My laſt experiment eſtabliſhes this point beyond doubt; and the dog which was the ſubject of it being at this time alive, may be ſeen by any who may ſtill doubt.

Though the fact be eſtabliſhed, I confeſs I had many doubts reſpecting the mode in which this was effected. Anatomiſts contended, if the voice ever returned, after having been deſtroyed by the diviſion of the recurrents, it muſt be by means of the laryngeal branches.

I was very much inclined to queſtion this, from obſerving what happened when one of the nerves of the par vagum was divided a conſiderable diſtance of time from the other; by which the nerve firſt divided united, and was able to perform its office before the ſecond was cut through: whereas, when both were divided at the ſame time, or at an interval of only a few days, the animal always died. In the fifth experiment ſix weeks intervened from the diviſion of the firſt and ſecond nerve, a ſpace of time ſufficient for union perfect enough for the performance of its function.

But this point can be reduced to abſolute certainty by experiment: if the laryngeal branches be divided in an animal which has recovered

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its voice after a diviſion of the recurrents or par vagum, the reſult will furniſh us with a deciſive anſwer: if the voice ſtill remains, it is evident that it has been reſtored by the union of the nerves; if, on the contrary, it be again taken away, it is equally certain that it had been recovered by the communicating laryngeal branches.

I intended to have ſubmitted this matter to an experiment, and had actually proceeded ſome way in the performance of it, but having had occaſion, in a former experiment upon the ſame animal, to make a ligature upon the trunks of the jugular veins, the collateral venous branches, by which the blood had been returned from the head, were become ſo much enlarged as to obſtruct the operation; I found it neceſſary to ſecure ſuch of them as were opened, and to ſuſpend my deſign of completing this inquiry until a more favourable opportunity ſhall preſent itſelf.

As the phyſiology of the larynx will admit of much ſpeculation, I ſhall beg leave to conſider the matter in another paper, *in which I ſhall bring forward ſome conjectures* on the formation and modulation of the voice.

ARTICLE XXIII.

Case of a Wound of the Thorax; with some Remarks.

BY W. NORRIS, SURGEON TO THE CHARTER-HOUSE AND GENERAL DISPENSARY, LONDON, AND F.M.S.

Read OCTOBER, 12, 1789.

THE parts contained within the thorax being so immediately necessary to life, Nature, consistent with the wisdom displayed in all her works, has enclosed them in a case of bone.

The spine, the sternum, and the ribs, considering the degree of motion in these parts which respiration requires, are wonderfully well adapted to the defence of the contained

contained viſcera againſt external injuries. Inſtances of wounds, therefore, which penetrate the cavity of the thorax are much leſs frequent than thoſe of any other part of our frame, in proportion to the extent of ſurface. And, as ſuch wounds are always hazardous, I thought the relation of the following caſe might merit the attention of the Society.

On Thurſday the 10th of January, 1788, about eight o'clock in the evening, Thomas Johnſon, aged 31 years, going down King-ſtreet, was run againſt by a bricklayer, who had his trowel careleſsly ſticking out from under his arm. Though he was immediately ſenſible of ſomething having pricked him, yet he felt very little pain; but being ſoon alarmed by the diſcharge of a conſiderable quantity of blood, he came running to my houſe. Near a quarter of an hour paſſed before I ſaw him, as I was not at home; he was then ſitting breathing quick, and keeping his body bent to the right ſide. On examination I diſcovered a wound about a quarter of an inch below and behind the nipple of the right breaſt, which extended an inch and ſeven-eighths in a direction downwards and forwards. This wound, which now

now bled very little, was completely filled by a portion of the lungs, which protruded as far as the ſkin, and appeared to be unhurt, as neither blood nor air was obſerved to eſcape from it. As the man lived at a very ſmall diſtance, I had him immediately conveyed home in a chair, where Mr. Andree, the anatomiſt, ſaw the wound, &c. in the ſtate which I have juſt deſcribed. Having returned the prolapſed portion of lungs, in order to effectually diſengage it from the wound, I carried my finger quite round on the inſide, and every where felt the lungs diſtended. I then brought the lips of the wound together by a ſuture through the integuments, and applied a ſuperficial pledget. Mr. Vaux and Mr. Aſhwell now ſaw the patient with me, and we immediately took away twelve ounces of blood, and ordered an anodyne; as the man had a diarrhœa at the time, it was unneceſſary to give him any purgative medicine. The moſt rigid abſtinence was enjoined, and barley water was ordered for his common drink. Should a cough, difficulty of breathing, or any other urgent ſymptom occur during the night, his attendants were deſired to give

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me notice of it; and accordingly I was called to him at three o'clock in the morning. At this time his breathing was laborious and ſhort, but not attended with much pain. Twelve ounces of blood were immediately taken away, which became very ſizy, and he was much relieved.

At nine o'clock on Friday morning we found him with a full hard pulſe, beating about 100 times in a minute; and, as our great object was to allay or prevent inflammation of the lungs, we bled him again to the quantity of ten ounces.

As it would be both tedious and uninteresting to relate the ſymptoms at the different times at which I ſaw him each day, I ſhall content myſelf with obſerving, that from the fulneſs of his pulſe, and the difficulty in reſpiration, which bleeding always removed, it was judged neceſſary to repeat that operation four times in the courſe of this and the two following days, during which time the pulſe varied in quickneſs, never beating more than 125, nor fewer than 110 times in a minute.

The wound looked well, and diſcharged very little. The patient during the above

period

period had no acute pain, though troubled with a ſhort, frequent cough, which he had had in a ſmall degree before the accident; he only complained of an uncomfortable tightneſs about the wound inwardly, and of this only when he coughed. He lay eaſieſt on the right ſide; but when tired of one poſture, he could, without much pain or fatigue, turn quite round; and he frequently lay on his back. The choice of poſture was left entirely to himſelf, that he might be ſure to have the moſt eaſy, which will always be found to be the beſt. Hitherto the antiphlogiſtic plan was moſt rigidly adhered to, the patient during three days and a half not having taſted any thing ſtronger than barley water, and having in that time loſt about ſeventy ounces of blood.

On Monday morning, the 14th, his pulſe was not ſo frequent, his thirſt was abated, his tongue was moiſt, and reſpiration free; a little milk was therefore added to his barley water, and weak beef tea directed to be given frequently.

On Tueſday morning we found that he had paſſed a reſtleſs night, his pulſe had again become full and quick, his cough was troubleſome,

troubleſome, reſpiration ſhort, and he now complained of a more acute pain in his ſide than he had before felt. Thoſe ſymptoms we ſuppoſed to indicate an inflammation of the pleura; and ten ounces of blood were inſtantly taken away, by which he was much relieved. The beef tea was diſcontinued, and he was only allowed to drink barley water, or toaſt and water. In the evening he became again worſe, and was again bled to the quantity of eight or nine ounces.

He ſlept well, and on Wedneſday morning was much better, but towards night the pain again returning with ſhortneſs of breath, it was judged neceſſary to take away ſix ounces more blood.

This enabled him to paſs the night with eaſe and reſt, and on Thurſday morning we found him quite free from pain, his tongue moiſt, and his breathing free; his pulſe was reduced to ninety in a minute, and he deſired food, which was accordingly allowed him.

I now removed the ſuture, as the wound ſeemed to be perfectly healed. In this however I was miſtaken, for it ſoon began to open again, and within two or three days it diſcharged freely a thin ſerous matter; and

and on removing a compreſs of ſoft linen, which was generally kept on the part, I ſeveral times diſtinctly obſerved a puff of air ruſhing from the wound. Theſe circumſtances, which were ſometimes attended with a ſhortneſs of breathing, but without pain, I imagine were produced merely by the admiſſion of ſome air through the wound, by the ſuture being too ſoon taken away. The patient's appetite was keen, and he was permitted to indulge it; he daily acquired ſtrength, the diſcharge diminiſhed, the wound healed, and a few weeks reſidence in the country reſtored him to perfect health, which he now enjoys.

REMARKS.

On the ſubject of wounds of the thorax, the moſt celebrated phyſiologiſts ſeem to have fallen into error. Obſerving that, in the dead body, the pleura being divided, and air thereby admitted into the thorax, the lungs, if there were no adheſions, invariably ſubſided, they ſeem to have concluded from thence, that, upon the infliction of a like wound, the ſame phænomenon would

take place in the *living*. The words of Haller are: "Si idem vulnus in vivo animale "inflixeris, perinde pulmo collabitur, et "immobilis jacet, et una ſpiritus ab animale ægrius ducitur, et vox debilitatur, "et perit demum, atque mors ipſa ſupervenit, ſi utramque thoracis caveam aperueris. Sed de ea morte alias rectius quæretur; addimus interim pectoris vulnera, "quibus utraque cavea aperitur, *omnino perfuneſta eſſe*, ex præſtantiſſimorum chirurgorum teſtimonio," *lib.* viii. *ſect.* 2. That in the dead body the lungs will collapſe on the diviſion of the pleura, I very well know; but that this will happen in a living animal, Nature being left free to aſſiſt herſelf, I do not believe*. To determine this matter, however, I made the following experiments:

* My meaning is, that if the wound be kept open ſo that the air can get eaſy admiſſion to the cavity of the thorax, the lungs muſt neceſſarily collapſe in proportion to the quantity of air ſo admitted; but that, if nature be not counteracted by art, the wound will be contracted, and the entrance of air prevented by the drawing of the ribs together, and the animal bending to the injured ſide, unleſs the opening be *very large*.

I made

I made an opening into the thorax, at about an equal diſtance from the ſternum and ſpine, between the eighth and ninth ribs of a ſheep. The inciſion through the pleura was about an inch long, and eaſily admitted my finger. The animal was then untied, and ſuffered to go about, which it did without any apparent inconvenience. I very attentively watched its breathing for ſome time, which did not appear to be in any degree oppreſſed, nor at all quicker than that of a number of other ſheep with which it mixed.

Twenty-four hours after it was killed, and the lips of the wound were found ſlightly glued together, but eaſily ſeparable by my finger. The lungs oppoſite to the wound were inflamed to about twice the breadth of a crown piece, and the thorax contained nearly a pint of water, without any mixture of blood.

The above operation was repeated on another ſheep, which being killed the next day, the lungs oppoſite to the wound were ſlightly inflamed to the breadth of four or five inches. Not the leaſt inconvenience in breathing had been obſerved.

The ſame operation was again repeated, but I could not carry my finger round on the inſide as formerly, and I imagined that the pleura was not quite divided; but in attempting to tear it with my nail, I ſoon found that I had made way into the ſubſtance of the lungs.

The ſheep was now untied, and did not ſeem to be much affected by what had been done. The next day it was very languid, did not like to ſtir, and breathed quick. On the following day it was unable to ſtand, breathed very quick, and ſeemed to be dying. It was now killed, and we found an extenſive ecchymoſis, which covered the whole breaſt; but, though the lungs were wounded, there was very little emphyſema, which I ſuppoſe was owing to the cellular membrane being loaded with blood. Upon opening the thorax, the lungs were found univerſally adherent to the pleura in both cavities, and no force could ſeparate the adheſions; in attempting it the butcher always tore the lungs, which on the wounded ſide were conſiderably inflamed. I underſtand that it is not a very uncommon occurrence in ſheep to have the lungs perfectly adherent

throughout to the pleura, which the butchers term being *grown*.

I next opened, in the ſame manner, *both cavities of the thorax*. The wound on each ſide was large enough to admit two fingers to paſs through the pleura. The ſheep continued to breathe with perfect eaſe and freedom, and ſeemed to feel no inconvenience for four hours afterwards; when it was killed. When the abdomen was opened, I perceived that the diaphragm was more tenſe on one ſide of the thorax than on the other, and by preſſing upon this part I could feel the lungs at a little diſtance from it, which proved that ſome air had been admitted by the wound on that ſide.

I think it will from hence appear clearly, that the danger of ſuffocation from air being admitted between the lungs and pleura, if the wound be of a moderate ſize, is not much to be dreaded *; and certainly ſtill leſs ſo,

* Bonetus gives an account of a man who received a large wound under the left breaſt, through which a part of the lungs protruded, three fingers breadth in ſize.

Having had no chirurgical aſſiſtance for two days, the protruded part became mortified, and was afterwards cut off

ſo, if the wound be quickly cloſed by ſuture or other means. But if, as many have recommended, the wound be kept open by doſſils of lint imbued with irritating ſubſtances; if canulæ, or ſyringes, be intro-

off by the ſurgeon; and, what is very wonderful, he adds, "partem autem hanc lanci impoſitam *vidimus pendere circiter tres uncias.*"

"Huic homini (velut oſtendit ſectio poſt ſexennium "ipſi adhibita) accreverat duntaxat pulmo in ipſa plaga, "quocirca etiam nihil inde perceperat incommodi præter "levem tuſſiculam, ſed non ita moleſtam, quin potuerit "cum illa non tantum quocunque locorum navigare, ve-"rum etiam continenter popinis ac comeſſationibus inter-"eſſe, homo diſſolutiſſimæ vitæ."

Bon. Sepulch. Anat. Obſ. xxii. de Vuln.

Hildanus alſo records the caſe of a man who was wounded between the fifth and ſixth ribs, near the ſternum, and a part of the lungs protruded through the wound, drawn out, as was imagined, by a turn of the ſword, "juſſitque "quamprimum eam lobi pulmonis partem, quæ foras pro-"minebat, priùs benè vino lotam in pectus retrudendam; "ſed eam, dum tractaretur leviter, liveſcere animadver-"tens, amputare fecit ferreo candente inſtrumento. Reli-"quum verò in pectus benignè retruſit chirurgus, dilatatis "priùs cuneo, ad id ex tempore parato ligneo, coſtis: de-"inde vulnus ex arte, poſteà et medici præſcripto, cura-"tum fuit," &c. Hild. Cent. 2, Obſ. xxxii.

See Mr. Warner's Caſes, 4th edition, p. 196.

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duced into the cavity for the purpofe of evacuating fome fuppofed extravafated fluids *; or if injections be thrown in with a view of attenuating fuch fluids, or cleanfing the cavity, then certainly all the evils that have been enumerated are juftly to be apprehended. Almoft the whole of the danger from wounds of the thorax, where the lungs are not injured, feems to arife from inflammation, and its confequences; and it is lefs furprifing that fuch wounds fhould have been reckoned extremely dangerous by the moft eminent furgeons, than that any patient fhould have furvived the treatment which was advifed and generally adopted.

The practice of fome was right, though founded on falfe reafoning; but the greateft number, taking for granted, that in thofe wounds a quantity of matter muft neceffarily be formed, acted accordingly.

Fab. ab Aqua pendente, fays, " Quidam " tamen volunt non effe aperta foramina re- " linquenda, fed glutinanda, *ne calor vitalis* " *expiret*, et aer frigidus, ac corrumpens in- " grediatur: mihi tamen probatur ut aper-

* Warner's Cafes, p. 172, 173.

" tum

" tum teneatur vulnus; nec enim tam fa-
" cile materia per urinam, et os vacuari
" poteſt, quemadmodum per foramen vul-
" neris, è quo ſtatim, via expeditiſſima, fit
" totius materiæ vacuatio."

Lib. II. cap. xxiii.

ARTICLE XXIV.

Cases of Hydrophobia.

BY J. SHADWELL, M.D. C.M.S. OF BRENTWOOD.

Read February 21, 1790.

THE numerous remedies which medical annals furnish for the hydrophobia, and the infrequency of success in the cure of it, point out how little dependence is generally to be placed upon medical testimony.

In the recital even of those cases wherein the treatment has been reputed to have overcome the hydrophobia, death has usually ensued, either a few hours after the cessation of that symptom, or, at farthest, upon the following day, which rather indicates that the

the powers of nature were exhaufted by the difeafe, than that a cure was effected by the medicine.

The idea of preventives conveys fomething too abfurd for ferious difcuffion, for, as among ten perfons bitten by the fame dog, the infection will not probably affect more than one, the celebrity of fuch medicines or applications hath arifen from the fuppofition only of averting an evil, which I dare affirm would, even without their aid, have never exifted.

Every fymptom has more or lefs varied in the different objects of its fury, but no one more fo than that of the madnefs. To prove this affertion it were an eafy tafk to extend this paper with quotations from tribes of authors; but the learning of the members of this fociety will readily fupply the abfence of fuch references.

In regard to the affection of the mind, a very ftriking contraft is furnifhed by the two patients, the fubjects of this paper, who came under my obfervation. During the agony with which the convulfion agitated and writhed the body of the firft, his mind retained her faculties almoft wholly unclouded,

clouded, and he wiſhed for death, as the ſole emancipation from hopeleſs pain and miſery. Senſe, during the continuance of each paroxyſm, forſook the other; through the firſt days, except when interrupted for the exhibition of the remedy, or in the paroxyſm, he preſerved a ſullen ſilence.

Of the dogs which occaſioned theſe calamities I have carefully collected every poſſible account; deeming all attention to this animal of the utmoſt importance to the ſafety of individuals;—of an animal too, who, educated in the boſom of man, is thus unhappily perverted into his moſt formidable enemy.

Several writers have alledged that, previous to the canine madneſs, the dog always grows melancholy and fond of ſolitude; that he rejects firſt ſolid food, and that after this progreſſion, the hydrophobia commences. In this concluding and highly infectious ſtate, wherein he is ſaid to exiſt only thirty hours, he knows not his owner, and indiſcriminately attacks all he meets. In general it may perhaps be the caſe; but in the firſt inſtance the dog had the preceding moment eaten bread and milk, his uſual breakfaſt,

breakfaſt, and turned immediately upon the following unhappy victim of his fury; he next attacked and bit his maſter, an aged man, both in the hand and leg; upon this he ran to a farmer's about two miles diſtant, and bit two dogs (both of which have ſince gone mad), and two children; thence he returned home again, where, after biting a pig and killing a fowl, his further ravages were fortunately prevented.

CASE I.

On Sunday the 19th day of December, 1790, I went to ſee Joſeph Wyburn, a youth of fifteen years of age, who had been bit in the left hand by the dog juſt above deſcribed. At ſome diſtance from the houſe his ſhrieks were very diſtinctly heard. I inquired when they had firſt perceived him to grow ill, and was informed, that on the Tueſday night preceding he complained of pain in his left ear, which being imagined to be merely a cold, they adviſed him to go to bed.

Upon Wedneſday morning he complained

cf

of the pain extending down his neck to the tonfils. They obferved that on this night he feemed melancholy, and rather avoided their company; he drank however fome warm beer, and going to bed, flept well.

On Thurfday he attended the horfes, his ufual employment, but appeared, according to their phrafe, very comical and odd in his behaviour. In the night he alarmed his mafter by fudden fhrieks; and rufhing into his chamber, declared there were thieves in the houfe, and that there were others endeavouring to fteal horfes out of the ftable; and pointed to lights, which he fwore he faw paffing to and fro, and defcribed the dreffes of the people: this upon inquiry being found to be totally groundlefs, caufed, for the firft time, fufpicion in his mafter's mind; but they pacified him, and he returned feemingly contented to his bed.

On Friday morning, upon offering milk, he turned from it with fhuddering, and faid he could drink tea; this being procured, he rejected it with horror, and began by clinging to the mantle-piece, to writhe his body; from thence he haftily turned round from the air, and, to the aftonifhment of the fpectators,

tators, he ran up ſtairs as faſt as could be conceived, backward, in order to prevent, according to his own words, the air from ſtifling him. In his chamber he fell into a moſt violent convulſion, which laſted ſome minutes; being entirely debilitated by the ſpaſm, he made a few drops of urine, the laſt evacuation he had, and ſunk into a ſwoon. In this ſtate he was conveyed to his bed, where, being attacked by the ſpaſm, four ſtout young men with difficulty maſtered him: they confined him by ſheets formed into broad bandages, leaving the fore arm only at liberty: different kinds of food, liquid and ſolid, were repeatedly offered; the former was rejected with the utmoſt horror, though he complained of violent thirſt, and ſeemed pleaſed with the idea of drinking.

On Saturday all the ſymptoms were exacerbated, and the maſter began then to ſuſpect the futility of the ſea-bathing, and of the Ormſkirk medicine, both which had been tried upon himſelf and the boy, under the ſtrongeſt aſſurance of perfect ſafety. I ſhall omit any farther detail of the vain attempts by the

maſter

maſter and his friends, to force ſuſtenance down, until the Sunday evening when I firſt ſaw him.

Fancy cannot paint a more diſtreſſing ſcene.—He lay writhing his body into every poſture which his confinement permitted; but which the violence of the ſpaſms and convulſions in a great meaſure ſubdued. The pupils moſt amazingly dilated; the nails of the toes and fingers perfectly bleached; the ſaliva ſtreaming from each ſide of the mouth; and every muſcle in a ſtate of great rigidity! The mournful ſilence of the family was every inſtant interrupted by his ſhrieks; his pulſe was extremely low, and the ſkin cold to the touch; yet he complained of burning oppreſſion and lancinating pains, as if of pins and needles, about the region of the ſtomach. I requeſted him to ſhew me his tongue; after ſeveral efforts, which evidently cauſed pain, I obtained a tranſient glimpſe of it—Nothing particular appeared but a lead coloured ſtripe running along the middle of it.

Although from the duration of the attack I had no hopes, I reſolved however to try the mode of cure deſcribed in the ſecond volume

volume of our Memoirs. Oil was procured with the utmoſt ſpeed, and I had him immediately anointed from head to foot; I then directed ſome oil to be preſented to him in a wine glaſs; the ſight of it produced convulſions. I afterwards had it put into a mug, and, with the aſſiſtance of three men, endeavoured to force ſome down his throat; this effort augmented all his ſufferings, and with tears and cries he entreated us to deſiſt. As previous to his misfortune he had known me, I reaſoned with him, and begged of him to try; he conſented, but upon the oil being cautiouſly and gently advanced towards him, he wept bitterly, turned his head away from it, and declared his deſire rather to die than to attempt any further endeavours at drinking. After repeating the unction again, I quitted him late at night, leaving directions to the attendants to rub him repeatedly all over, and, if poſſible, to get down ſome oil.

Early on Monday morning I viſited him. They had anointed him three times in the night; but the attempts to make him ſwallow proved futile, and only made him outrageous, for upon ſeeing me he declared he

would

would bite and ſpit at the perſon who endeavoured to force it down. He complained to me of great ſtoppage in his throat, and load at his ſtomach, and ſaid he could vomit if carried into the air. On the opening of the window he fell into convulſions; the rigidity of the muſcles was the ſole alteration I could perceive. Finding by the total want of pulſe, and the lividneſs of his ſkin, &c. that death was advancing with rapid ſtrides, I agreed to deſiſt, but Doctor Sims, who was then on a viſit to me, and accompanied me to ſee him, propoſed enemas of oil and fat mutton broth; this intention was only once effected with the utmoſt difficulty; and after ſome violent paroxyſms, the ſaliva ſtreaming more copiouſly than ever from one ſide only of his mouth, he quietly expired that night at half paſt eleven o'clock.

During the whole diſorder he had no priapiſm; he ſcarcely ever loſt his memory or recollection; for a moment he ſometimes raved about dogs, declaring he would kill them; but he knew the by-ſtanders, and being queſtioned, repeated their names, and pointed to each. I ſent to his father for

permiſſion

permiſſion to open his body, but ignorance and prejudice refuſed this ſatisfaction.

The wound on this boy's hand never tumefied, nor appeared inflamed; he ſaid it felt rather ſore.

From the Saturday until the fatal evening of his diſſolution he never ſwallowed any thing; but he retained his ſight, notwithſtanding the pupils of his eyes were ſo vaſtly dilated.

I mentioned a pig being bitten by this dog in the ear, which made it bleed copiouſly. Nine days from the time of its receiving the wound, it alarmed the people by diſplaying unuſual agility: it repeatedly ſprang off the ground to the incredible height of a dozen feet, as they ſaid, and afterwards, bending its fore legs underneath its belly, it ſtretched out its neck, which it rubbed ſtrongly againſt the ground by forcing itſelf along the yard with its hinder legs. In that attitude they killed it.

From this caſe, which in ſome ſymptoms diſagrees with others I have peruſed, but accords in its tragic cataſtrophe, I have the pleaſure to turn the attention of the Society to the recital of another, which in its concluſion, I believe, almoſt original.

CASE II.

John Cumbers, a drover, aged twenty-two, was, on Saturday the 18th December, 1790, bit by his own dog between the thumb and the index of the left hand. He continued well until the Monday week following, when his appetite was obſerved to decline; and he became low-ſpirited and melancholy, ſighed frequently, and complained of failure in his ſight.

Wedneſday the 29th he complained of violent pain in his head; that evening he was ſeen ſtanding in the ſtreet as if rooted to the ground, for a quarter of an hour, his eyes being motionleſs, and their pupils greatly enlarged. The perſon who firſt obſerved him, endeavoured to rouſe him from what he ſuppoſed a trance, by feigning to ſtrike his face with a ſmall ſtick, which he advanced cloſe to his eyes, but without any effect. His ſiſter entreated him to return home; without replying he ruſhed violently into his houſe, ſeized his mother, and bit her head; her outcries alarmed the neighbours, and ſeveral men ran to her aſſiſtance,

ſome

ſome of whom he bit, but who with difficulty overpowered him, and kept him in his bed. That night Mr. Weld, an ingenious ſurgeon at Romford, was called in, who found him raving without an interval of reaſon. The ſtraight waiſtcoat was judged neceſſary. Towards morning he became calm.

On Thurſday he was very melancholy; his eyes were fixed, and the pupils much dilated. About ſeven o'clock in the evening the convulſive paroxyſm recurred, and continued an hour; but he paſſed that night more compoſed.

On Friday morning early I ſaw him; there was then a peculiar rigidity obſervable, particularly about the muſcles of the lower jaw; he rejected liquids and ſolids with horror, and was viſibly affected by the cold air. Upon inquiring what treatment had been adopted, I found the mother had procured ſome trivial herbs, ground-ivy, &c. recommended by her acquaintance; the infuſion made from them ſhe had been unable to get him to bear the ſight of. I propoſed to Mr. Weld the treatment I had endeavoured to adopt in the caſe of Wyburn.

 Oil

Oil was directly ſent for, and, putting it into a pewter tea-pot, I deſired it to be adminiſtered. He ſtruggled furiouſly, and bit off the ſpout: he was then anointed from head to foot. The next trial for the internal exhibition of the oil proved rather more ſucceſsful: it was poured into a pewter pap-boat, and his mouth being forced open, ſome little of it obtained a paſſage: notwithſtanding theſe difficulties, the internal and external exhibition of the oil was aſſiduouſly perſiſted in. The paroxyſm at eleven o'clock that night recurred with great violence.

Saturday, the firſt of January, 1791, he was quiet, except when drink was offered, or that dogs were mentioned in his hearing, which evidently produced great diſturbance in him. He was rubbed repeatedly all over; and in the night a degree of ſenſe returned, and he drank, but with much uneaſineſs, a little quantity of water, and relapſed into his uſual ſtate about an hour after.

On Sunday morning the ſymptoms continued ſimilar; but towards the afternoon he began to ſhew ſigns of returning reaſon: he called for drink; broth being preſented

to

to him, he rejected it with evident marks of horror; but what enlivened my hopes, he ſwallowed ſome water not long after. Upon his mother's queſtioning him, whether he knew her? he with tears ſhook his head, and exclaimed, "Lord have mercy upon "me." At eleven o'clock that night the paroxyſm returned, but in a ſlighter degree.

On Monday he was perfectly compoſed, and his mother had, without his knowledge, looſened the ſtraight waiſtcoat; finding himſelf at liberty, he begged to be confined again, for fear of doing miſchief.—There was no return of the paroxyſm that night.

On Tueſday he was remarkably affected by noiſe and cold air, which he avoided by covering his head with the bed-clothes.

Wedneſday and Thurſday afforded no particular alteration.

Friday a further progreſs in amendment took place; his countenance appeared better, the pupil of a more natural ſize, and he took ſuſtenance without fear.

On Saturday the recovery ſeemed to advance rapidly; but he diſcovered great anti-

pathy to the perſon who was the principal inſtrument in adminiſtering the remedies.

On Sunday every ſymptom of hydrophobia and the convulſions ceaſed; he was perfectly collected, and complained of unuſual soreneſs, chiefly about his jaws.

During the illneſs, from the day I firſt ſaw this patient, moſt plentiful frictions of oil were employed, his whole body from head to foot being repeatedly anointed with it; between three and four ounces of it were exhibited internally, the doſe being increaſed with the facility of adminiſtering it.

In the earlier ſtages of the diſorder I had beſides clyſters of fat mutton broth frequently injected, both as a means of ſuſtenance and ſuccedaneum for oil.

In this patient the bite aſſumed a ſlight appearance of inflammation, which ſubſided gradually with the recovery; the pulſe never varied, but continued at 45 during the whole confinement; very high coloured urine was paſſed the ſecond day in a ſmall quantity, but there was never any erection of the coles. He remained coſtive until the firſt clyſter was given, to which an evacuation

cuation very ſoon ſucceeded. The oil was continued to be uſed ten days after the abſence of every ſymptom, but a great degree of debility attended his recovery: perfectly unconſcious of any occurrence during his illneſs, the time that paſſed between its commencement and cure now preſents a blank only to his mind.

This dog, which was of the cur kind, diſcovered the ſymptoms of madneſs firſt, by ſhunning people, and refuſing food; his eyes watered exceedingly, and the fierceſt maſtiff fled in diſmay before him. Nor was this effect confined to one dog; for he ran at ſeveral, all of which ſhewed the ſtrongeſt marks of apprehenſion, and, when bitten, howled in the moſt pitiable manner. He then fled ſome diſtance to a farmer's yard, where he bit the maſtiff, and other dogs, who, upon receiving the wound, uttered a yell, and betrayed the greateſt fear and anxiety; ſoon after which he was killed.

I have thus related every ſymptom which in this laſt caſe was obſerved both by myſelf, and confirmed by the joint attention of Mr.

 Weld,

Weld, a gentleman whoſe ſkill and humanity I ſeize this method of publicly acknowledging.

To the ſplendid abilities and profound learning of Doctor James Sims the medical world is indebted for the revival of a practice, whoſever it be, that has ſimplicity and eaſe to recommend it, conſiderations peculiarly advantageous, as the objects moſt obnoxious to this diſaſter move in the humbler walks of the community. For myſelf, I am happy and proud to have been the inſtrument of its firſt ſucceſsful application, and of the honour of communicating it to this Society.

POSTSCRIPT.

Since I delivered in to the Medical Society the above Memoir, a caſe of hydrophobia has occurred at Sudbury, in which it was aſſerted, that the exhibition of the oil had increaſed and exacerbated the ſymptoms.

Anxious of having the experiment repeated in an accurate manner, I beg leave to ſtate the treatment, which will ſhew that the practice in this inſtance adopted tended

to

to invalidate nothing advanced in favour of the oil.

The patient was firſt blooded to the amount of ſixteen ounces; then ordered to take two grains of opium every three hours, and the inſide of his thighs and legs were directed to be rubbed every morning and evening with ſix drachms of ſtrong mercurial ointment, and frictions of oil to his neck and cheſt every hour, until an oil bath could be prepared, into which he was immerſed that ſame evening, and ſtaid in it ten minutes.

This method being widely different, cannot, I preſume, be adduced as an argument againſt that recommended in this paper.

ARTICLE XXV.

On the Paracentesis.

BY JAMES SIMS, M. D. &c. PRESIDENT OF THE MEDICAL SOCIETY OF LONDON.

Read NOVEMBER, 8, 1789.

THE objections to the common mode of performing the paracentesis are numerous. A worse perforating instrument than the trochar can scarcely be contrived; for which reason considerable force is obliged to be used in driving it through the integuments, which being usually done by a stroke, it goes with a jerk into the cavity. In this mode no one can be certain how far it will penetrate; and I have known it, even in skilful

ſkilful hands, penetrate into the ſubſtance of the ſpleen and other viſcera. To avoid this danger I remember a celebrated anatomiſt recommending the perforation to be made, prior to the uſe of the trochar, with a lancet through the ſkin, which gives the principal reſiſtance, thus preferring a complicated, but ſafer operation, to a more ſimple but dangerous one.

The uſe of the canula afterwards is perhaps not leſs objectionable: by its means more water is drawn off than the contraction of the integuments can compenſate; therefore formerly many perſons died under the operation. As this event was ſuppoſed, not unjuſtly, to take place from the ſudden removal of the preſſure upon the adjacent veſſels, it has been propoſed, and almoſt univerſally adopted, to make a preſſure on the abdomen, by the hand, or by means of rollers, bandages, or laced waiſtcoats. How diſſimilar ſuch preſſure to the natural, and how deficient in equality and uniformity! It is true it abated the danger of inſtantaneous ſyncope and death; but that it took away the more ſlow effects of the inanition may be doubted. What adds to the danger alſo is the common preference

given

given to a large canula, on account of its being lefs liable to obftruction. Whenfoever the canula is obftructed, which moftly happens from the application of the inteftines to its orifice, a probe is introduced for their removal, without any thought of the probable, though remote confequences, of the application, and it may be faid irritation of fuch unufual extraneous matter to their peritoneal coat. And even where no probe has been introduced, the point of the canula muft come in contact with that furface, when the water is nearly evacuated. About the fame time likewife cold air is perhaps moftly admitted into the cavity, which is thought by many to be a very pernicious application.

The place where the operation is performed, which is half-way between the umbilicus and the upper anterior fpinal procefs of the ileum, is not unexceptionable, the thicknefs of the integuments preventing an accurate perception of any enlarged or adhering vifcus underneath. But the courfe of the epigaftric artery is ftill a greater objection. It may be made a queftion whether there be not fo great a variety in its courfe

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in healthy bodies as to prevent even a good anatomiſt from being able to point out its exact ſituation in any one body before diſſection: but, admitting that he could do ſo in a healthy body, the caſe is different in the aſcites, where from diſtenſion the ſituation of parts is ſo much altered as not improbably to bring the artery to very nearly the place where the operation is directed to be performed. That this is ſometimes the caſe I know from having loſt a very dear relation by that artery having been wounded by the trochar, and from my knowing ſome other ſimilar events, I have reaſon to think that misfortune not unfrequent, even in very ſkilful hands.

From which of the former cauſes the almoſt conſtant bad ſucceſs of the operation is derived I ſhall not pretend to determine; but have found, that in vaſtly the majority of caſes a fever ariſes after a few days, with thoſe ſymptoms which may be ſuppoſed to point out peritoneal inflammation, and which cuts off the patient about, or ſoon after, the end of the ſecond week. Were the proportion of the deaths to be accurately ſtated, it may be doubted whether any practitioner would

choose to perform the operation, and also whether more would not recover if left entirely to themselves. The common people at least are so convinced of this, that it is with great difficulty they are brought to submit to it. But unfortunately in medical records the few successful cases are detailed at full length, whilst all the others are consigned to total oblivion.

Alarmed at the frequent miscarriages of the operation which I beheld, and greatly shocked at the loss of the relation I have just mentioned, I ventured, upwards of twenty years ago, when practising in the country, to recommend an entire change in the operation by using the lancet alone at the umbilicus.

The first hint to this practice I took from a case of Ascites, which luckily occurred whilst the grief for the before mentioned fatal hæmorrhage was yet strong on my mind. In this case the old cicatrix at the umbilicus opened, and, permitting a free passage to the water from within, on the least effort to cough the fluctuation was felt under the skin, which being slightly punctured with a lancet, the whole water collected in the abdomen was evacuated. Upon consider-

ing

ing this caſe maturely, I reſolved to carry the practice one ſtep farther, and to have the puncture made through the peritonæum in the next caſes that might occur, ſhould there be no ſimilar opening at the ſpot; and, of ſeven caſes wherein this advice was then followed, four recovered perfect health.

On my firſt coming to this city I propoſed the method to ſeveral practitioners, but without effect; and I did not find myſelf ſo well eſtabliſhed in the public confidence as to authoriſe my inſiſting on the operation. I have lately, however, had it performed in three caſes, by Mr. Norris, an ingenious ſurgeon of this place. In the firſt it proved completely ſucceſsful. The ſecond was as bad a caſe as I ever ſaw: a very ſmall delicate lady, who had above forty quarts of water in her abdomen; the integuments were grown ſo thin as to threaten burſting; ſhe had not been out of bed for many months; her pulſe was extremely quick, and ſcarcely to be felt; and her ſtomach would not retain any aliment.—It is needleſs to ſay that this caſe terminated fatally. The third was the caſe of a woman who had been repeatedly tapped before, and has been alſo ſeveral times ſince.

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The operation which I allude to is very ſimple, being nothing more than thruſting in a common lancet at the umbilicus, until the water iſſues. The orifice ſhould not be large, nor ſhould the water be forcibly preſt out, but allowed to come away juſt as the contraction of the integuments occaſions. Some water even moſtly remains in the abdomen; but this is afterwards abſorbed in thoſe caſes that terminate favourably. The evacuation is gentle, and continues a day or two, ſometimes ſix or eight. The part where the orifice is made being tendinous, does not cloſe while there is any preſſing force exerted by the muſcles; and there is ſcarcely a drop of blood loſt.

The preſſure occaſioned by the water upon the contents of the abdomen, and even in ſome meaſure of the thorax, is not ſuddenly taken off; ſo that there is no occaſion for rollers, or a laced waiſtcoat. If we ſuppoſe with ſome, that the mere injury done to the membrane lining a cavity conſtitutes the danger, we may as readily ſuppoſe it to be avoided by this mode, as the part injured is only the cicatrix left after the falling off of the navel-ſtring in the fœtus, and therefore very different from any other part of the peritonæum.

Having

Having given this concise history of what I have seen of this operation, I submit it to the consideration of the medical faculty, hoping that it will appear not unworthy of a farther trial. At the same time I must freely declare, that I know not one objection to this mode that does not more forcibly apply to the common one; whereas in elegance, simplicity, ease, freedom from hæmorrhage and pain, and in a number of other respects, it seems vastly preferable.

It is to be noticed, that this operation is totally different from the perforation at the umbilicus recommended by some early writers, but since laid aside, in which a canula was used: the objections, therefore, to the latter, are not applicable to this operation.

ARTICLE

ARTICLE XXVI.

Caſe of Laborious Parturition, with the Conſequences.

BY M. WILKINSON, SURGEON, OF SUNDERLAND.

Read APRIL 4, 1791.

IN the month of July, 1748, Elizabeth Lawrence, a married woman, low of ſtature, but of a good and healthy conſtitution, then 32 years of age, fell in labour of her firſt child. The preſentation was natural, and the membranes had broken early on the ſecond day: this ſhe obſerved was occaſioned by the rude examinations of the midwife then attending.

On

On the afternoon of the third day ſhe became greatly exhauſted, the pains having left her; the child's head had advanced pretty early into the cavity of the pelvis, in which poſition it ſtill remained, without being much altered by the pains.

From the beginning of the labour, except on the firſt day, ſhe had made no water. The cuſtom, which at that time was in uſe, and ſtill prevails among the common people, of drinking large quantities of ſpirituous liquors in their gruel, with a view to promote labour pains, had greatly increaſed the ſecretion of urine; her abdomen became ſore, and greatly diſtended. Unfortunately no notice was taken of this by the gentleman called to her aſſiſtance, of courſe the introduction of the catheter was neglected.

The ceſſation of the pains, narrowneſs of the pelvis *, and impracticability of applying the forceps, ſeemed to render it neceſſary to open the child's head. This, it ſeems, was literally the caſe, from the patient's deſcription of the long ſciſſars, and other inſtruments.

* On diſſection the pelvis appeared ſmall.

After ſome degree of exertion the head was brought forth; yet the grand difficulty, occaſioned by the ſhoulders, required the united aſſiſtance of two females to that of the accoucheur: at length, by repeated efforts for the ſpace of two hours, the delivery was at laſt effected; but, at the very inſtant the ſhoulders protruded, ſhe felt ſomething give a crack within her, and immediately a ſudden guſh of water followed, equal to four quarts, or upwards. The abdomen inſtantly ſubſided, and the patient felt herſelf eaſy.

The placenta followed, a very ſhort time afterwards, with little or no hemorrhage.

Being put to bed, ſhe found herſelf very wet, her urine continuing to run off conſtantly, ſo that a great number of cloths were neceſſary to abſorb the moiſture.

On getting up two days after, for the purpoſe of having her bed made, ſhe felt at that time an inclination to make water, but was ſurpriſed that it came away in an involuntary manner, and that ſhe had loſt the power of retention.

On the third or fourth day, ſhe found herſelf much worſe, being ſeized with ri-

gors,

gors, accompanied with heat, thirst, and restlessness; the whole of the parts of generation internally, as well as the external labia, became much inflamed and tumefied. Suppuration next followed, with a considerable discharge of fœtid matter from the vagina, and external parts; many sloughs were thrown off, one of which was so large as to induce the gentleman attending to suppose it the urinary bladder. The swelling having by this time subsided, and the parts being greatly denudated of their covering, the smarting occasioned by the acrimony of the urine became more severe, frequently occasioning a troublesome hemorrhage. Strong uterine contractions, which she compared to labour pains, coming on at the end of a fortnight, produced a prolapsus as large as her fist. In short, after a variety of sufferings, she found herself, at the expiration of six weeks, so much better, as to be able to walk about the house, and get to the door; but the constant dribbling of urine and prolapsus vaginæ still remained. Her situation was the more distressing, as the stools, particularly when soft, passed from a communication through the rectum

into the vagina. Several attempts were made to reduce the prolapſus, but the irritable ſtate of the parts, and contractions of the uterus, always prevented her from uſing a peſſary.

After the expiration of three years, ſhe was attacked with what ſhe called grinding pains in her belly, back, and loins, accompanied with exceſſive ſickneſs and retching; for which ſhe was bled, and the menſes coming on ſoon after, ſhe found herſelf relieved: the time of their continuance was three or four days.

Another year being fully completed, ſhe was taken ill as before, but became better by bleeding, and the return of the catamenia, which continued upon her a whole week. Three weeks afterwards they again returned, but from that period entirely left her.

Her ſtate of health, after this, was ſomewhat tolerable: now and then ſhe was attacked with pains in the back and loins; ſometimes ſhe was ſeized with diarrhœa, accompanied with frequent teneſmus, more particularly after being coſtive.

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The prolapſus vaginæ became habitual, but was much diminiſhed in bulk; ſometimes ſhe could reduce it with her fingers, but obſerved, that it never continued up longer than a quarter of an hour at a time. Among the variety of means made uſe of as an external application, ſhe found the greateſt benefit from alum water.

In this deplorable ſituation ſhe lived till February 2, 1789, being nearly forty-one years after her misfortune; at which time ſhe died, at the advanced age of ſeventy-three.

It was with the greateſt difficulty that I obtained leave to open her body; but, at length being allowed, I removed the whole contents of the pelvis as low as the *anus* and os externum. On examination of the parts, I found a communication between the rectum and vagina ſufficient to admit my thumb to paſs. The fore part of the vagina, the poſterior ſurface of the bladder, juſt below the opening of the ureters, as alſo the whole of the urethra, were gone, and the remaining part of the anterior ſurface of the vagina adhered acroſs the os tincæ to the poſterior ſurface; ſo that the

os tincæ was wholly obliterated; and on introducing the finger into the vagina, it was conducted forward to the fundus of the bladder, which was pretty perfect.

The left Fallopian tube had a tumour adhering to it about the size of a moderate golden pippin, and seemed full of fluid; but I did not open it*. The ovaries seemed quite sound, as well as the uterus; the rectum appeared diseased in its internal coat.

From a review of the case, and further information obtained from the patient, there is great reason to suppose her labor was brought on prematurely.

The too early rupture of the membranes not only prevented the gradual dilatation of the os uteri, and external parts, but, by lessening the bulk of the uterus, perhaps forced it too soon in contact with the pelvis and surrounding parts; hence, the order of nature being deranged, and the abdominal muscles prevented from co-operating with the action of the uterus by the over dis-

* The parts are in the possession of that ingenious anatomist Mr. John Hunter.

tention of the bladder, the pains became not only irregular and leſs powerful, but the patient's ſtrength was ſoon exhauſted.—How far the early emptying of the bladder by the catheter might not have contributed to reſtore the contractile power of the uterus ſo as to have effected the delivery, I will not pretend to determine, yet certain it is, that the moſt of the accidents which took place, particularly that of the laceration of the bladder, would have been prevented, and the delivery rendered much eaſier and ſafe.

The ſucceeding inflammation, and large ſuppuration, which took place after the delivery, are not at all to be wondered at when every thing is properly conſidered. Hence it follows, that, in all theſe caſes where the uſe of inſtruments ſeems neceſſary, great ſkill, as well as a careful attention to what may appear of the moſt trivial nature, ought never to be neglected.

In a conſequent point of view, the caſe I have related is indeed truly curious; the wonderful power in the conſtitution, by enabling this patient to ſupport life to ſo great an age, under the preſſure of ſuch a train of

 accumulated

accumulated injuries, ſeems not only aſtoniſhing, but affords us a convincing proof of the inexauſtible reſources of nature.

Although accidents of this nature are by no means uncommon *, and what may not be expected from an unſkilful uſe of inſtruments, or imprudent efforts to accompliſh delivery? yet I believe there are few caſes of this kind, whoſe cataſtrophes have been ſo lenient, or prolonged, or where a more ample field for examination and ſpeculation has been afforded.

* See Mauriceau, Lamotte, Smellie, &c.

ARTICLE

ARTICLE XXVII.

The Hiſtories of two Caſes of Bronchocele.

BY J. C. LETTSOM, M. D.

Read AUGUST 13, 1787.

IN Derbyſhire, and in other northern parts of England, and particularly in marſhy ſituations, the Bronchocele is prevalent; and I recollect, that, for the laſt thirty years, preparations of burnt ſponge have been tried by ſubjects of this diſeaſe.

In young people it has been found ſucceſsful in many inſtances, but it is rarely efficacious after the ſubject has paſſed the thirtieth year: in ſome inſtances it is alſo totally ineffectual in young ſubjects.

Some

Some of the warmeſt advocates for the utility of burnt ſponge recommend a combination of burnt ſponge with vegetable alkaline ſalt.

When this plan has failed me, I have ordered a grain of calomel to be added each night, attending to the quantity, to prevent a ptyaliſm; and where the preceding formula has not proved ſucceſsful, I have ſometimes known the addition of the mercury effect a cure.

The daughter of Colonel ———, rather under twenty years of age, came from the neighbourhood of Norwich, to reſide in London, with a view of being under my immediate attention on account of this diſeaſe. The tumour was about the ſize of an hen's egg, and ſpreading laterally, rendered it more unpleaſing to the ſight. I ſtipulated that ſhe ſhould reſide in town three months, under an expectation of diſperſing the complaint within that period.

I began with the burnt ſponge and calomel, and continued it till a diſpoſition to ptyaliſm appeared. The unguentum cæruleum fortius was alſo applied externally to the ſwelling, but at the end of two months

my

my endeavours were unſucceſsful. As the young lady was otherwiſe in good health, and the tumour not very conſiderable, added to the trouble the patient had undergone fruitleſsly, I felt much chagrin from the failure. In this ſituation my recollection ſuggeſted the benefit I had experienced from ſoap and camphor in inſtances of tumefied glands of the throat; this was ſtrengthened by an obſervation I had read in Marſden's Hiſtory of Sumatra *, who mentions ſeveral ſpecies of camphor, and particularly the camphire oil, procured in Sumatra by the following proceſs:—A tranſverſe inciſion is made in the tree to the depth of ſome inches, and then cut ſloping downwards from above the notch, till a flat horizontal ſuperficies is left: this is hollowed out, till it is of a capacity to receive about a quart; a bit of lighted reed is then put into the hollow, where it remains for about ten minutes, which acting as a ſtimulus, draws the fluid to that part.

I ordered a plaſter, of four parts of ſoap cerate and one part of camphor, to be ſpread

* Page 123.

on

on ſoft leather, and applied to the tumour, and twice a day to bathe the part (taking off the plaſter) with ſaponaceous liniment, prepared with double the quantity of camphor. The effect of this plan was ſo extraordinary, that in leſs than one week from the firſt exhibition of it, the diſeaſe totally ſubſided; and after the ſpace of ſome months, I have been informed, it has not ſhewn any ſigns of recurrence.

Before this patient was perfectly relieved, I was applied to by a young woman about twenty years of age; but, before I ſaw the good effects in the preceding caſe, I had given ſuch a quantity of calomel with the burnt ſponge, as affected the gums ſlightly, which deterred me from proſecuting it; and I was encouraged from ſucceſs to adopt another mode: this I did with very little variation from the former, but not with the ſame rapid ſucceſs, for it was by perſevering in this plan for a month, at the leaſt, before the diſeaſe was ſubdued; and indeed the ſwelling never totally ſubſided, but it remains ſo trivial, as to exhibit no eyeſore.

In this caſe, inſtead of uſing the mercurial ointment to the throat, I combined the emplaſtrum

plaſtrum mercuriale in the ſoap and camphor plaſter, which conſtituted the principal difference of treatment. I have not ſince had opportunity of gaining further experience on the ſubject, but the remedies are ſo ſimple and eaſy of application, as to give encouragement to future experiment.

ARTICLE XXVIII.

Of a ſucceſsful Termination of an Omphalocele.

BY J. C. LETTSOM, M. D. &c.

Read December 10, 1787.

M. G. a female about thirty years of age, and four months in pregnancy, after ſevere exertion, ſuffered a navel rupture; the magnitude of the hernia was upwards of three inches. After a few days continuance, ſymptoms of ſtrangulation ſucceeded, ſuch as exceſſive pain, vomiting, a quick and hard pulſe, and enlargement of the abdomen. Copious bleeding was immediately uſed, very large clyſters were repeatedly injected, and fomentations of emollient herbs were applied to the tumour.

All theſe means proving abortive, the ſurgeon, eminent in his profeſſion, who was employed with me, propoſed the knife, as the laſt reſource for relieving the miſerable patient: he was aware at the ſame time of the

the almoſt univerſal fatality of the operation, and though the inſtruments were introduced into the patient's bedchamber, it was propoſed firſt to try the application of ice to the hernia, for the ſpace of ſome hours, without intermiſſion.

As it was not attended with any increaſe of pain in the part, its application was ſtrictly adhered to. In four hours, when we again attended, we perceived a ſenſible diminution of the tumour; and the ſtrangulated inteſtine continuing to contract little by little, at length totally returned to its natural ſite. The patient, at the regular period, was delivered of a healthy child, and, though ſome years have ſince elapſed, ſhe has enjoyed a good ſtate of health.

Intenſe cold, long continued, will ſometimes deſtroy the living power, and induce ſphacelus: this, however, may be guarded againſt by occaſionally removing the ice; but ſhould a ſphacelus actually take place, the integuments in ſuch caſes may mortify, without at the ſame time injuring the inteſtine, as happened in one inſtance of inguinal hernia, lately communicated to me. After repeated attempts, directed by ſkilful ſurgeons, to reduce the hernia, had proved abortive,

abortive, it was propoſed to try the application of ice for four hours inceſſantly; after which period a conſultation was again had. The hernia continued in the ſame ſtate; but, as it was ſuſpected that, from tenderneſs, or ſome other motive, the ice had not been ſuitably applied, a remonſtrance upon ſuch neglect was earneſtly urged to the family: the ſon of the patient, rouſed thereby to more aſſiduity and perſeverance, applied the ice in ſuch quantity, as when the ſurgeons again met, they found the integuments were perfectly frozen, and ſphacelated: in this unhappy aſpect it was concluded to perform the operation by the knife inſtantly. To this end every thing was prepared, and the operator had the inſtrument in his hand; but, careful to aſcertain the poſition of the parts, he laid down the knife to examine again minutely the diſeaſed parts. In the act of handling them the ſtrangulated inteſtine ſuddenly extricated itſelf, and returned into the abdomen; and thus the neceſſity of the operation was prevented. The ſphacelated integuments indeed ſuppurated, but the patient gradually recovered.

APPENDIX.

APPENDIX.

A Fiſtulous Abſceſs in the Urinary Bladder.

BY STEPHEN LOWDELL, SURGEON,
and F.M.S.

Read June 5, 1784.

IN January 1780, a gentleman, aged about ſixty years, who had enjoyed a long ſeries of health, and led a regular and temperate life, began to complain of flatulencies and pains in his bowels, with ſtools more frequent and looſe than uſual.

During the months of February and March he took many doſes of rhubarb, and alſo teſtaceous, cretaceous, aſtringent, aromatic, and tonic medicines, occaſionally, for theſe complaints, but without any material or

laſting benefit. In April a new complaint ſupervened, which was an inclination to make water more frequently than uſual; and *he thought* he made, upon the whole, a larger quantity than was cuſtomary; but, upon a cloſe obſervation, it was found that he did not. He now complained alſo of pains in his hips, and at times in the penis and teſticles. The pains in his hips were attributed to a truſs which he had been obliged lately to wear on account of a recent hernia, and thoſe in the penis and teſticles to an irritating cauſe in the bladder; nothing amiſs being diſcoverable in the external appearance of thoſe parts. The urine was now generally turbid, more or leſs, when firſt made; and after ſtanding ſome time, depoſited a mucous or purulent ſediment, at firſt of a white, and, after ſome time, of a browniſh colour; the urine was alſo at one time a little bloody, at another like pale coffee, but not often. Sitting down on a chair, unleſs very gradually, ſlipping in walking, and riding in a carriage over pavements, increaſed his pain.

Theſe ſymptoms being looked on as indicative of a ſtone in the bladder, the medi-

cines

cines ufually given in fuch cafes were administered.

In May he complained that fome wind or air came fometimes through the urinary paffage together with the urine; and on examining the urine, fome carraway feeds, and the coats and feeds of currants which he had eaten, were difcovered in it. In the beginning of June the brown fediment in the urine was increafed in quantity, and manifeftly proved to be inteftinal fæces.

The phyfician who attended was, he faid, as well affured there was a ftone in the bladder as if he faw it in his hand; but, as there was now evidently an alarming difeafe of the bladder itfelf, and there was no room to hope for a cure, if the ftone was extracted, it was thought not neceffary nor advifable to pafs the found for the mere fatisfaction of proving it; it was therefore concluded to adminifter only palliative medicines chiefly.

The patient declined gradually in flefh and ftrength, but was able to walk out every day till about the middle of Auguft; when, his appetite failing, he grew too weak to go

abroad, and died at the latter end of that month.

The purging continued, more or leſs, through the whole of the illneſs, having never leſs than two ſtools in twenty-four hours, and never more than five or ſix. The pains were always ſo tolerable, and his appetite ſo good, that he was very able, and choſe to go out about his uſual buſineſs every day, from the beginning of his complaints till about the middle of Auguſt. The ſtools which he voided latterly were generally like the grounds of beer in conſiſtence, but of a dark dirty olive colour, and very offenſive ſmell. The largeſt quantity of fæces in the urine was about the beginning of June, ſoon decreaſed in quantity, but ſome degree of them was diſcoverable to the laſt.

On opening the body ſeveral pints of the ſame matter, that was voided by ſtool, were found in the pelvis, which being taken out, a portion of the colon was found ſtrongly adhering to the fundus of the urinary bladder, between both which there was a communication by means of an aperture large enough to admit one or more fingers; there was no ſtone, nor any calculous ſubſtance whatever,

whatever found in the bladder. By the ſaid aperture the matter found in the pelvis, as well as that which was voided in the urine, had eſcaped from the colon.

April 3, 1786. Dr. LETTSOM communicated the *Hiſtory of a Caſe of Canine Appetite, with Vomiting, in which 379 Pounds of ſolid and fluid Aliment were taken into the Stomach in the Space of Six Days.* By HENRY WASTELL, Surgeon, London.

WITH this immenſe quantity of nouriſhment, which was always taken voraciouſly, and ſoon after ejected, the patient became emaciated.

The recovery was effected by giving food boiled down to a jelly, in ſmall quantities, frequently repeated; by which means the tone of the ſtomach was gradually reſtored, and at length common aliment retained.

October 7, 1787. Mr. PEARCE, Surgeon, communicated the following *Cases of Præternatural Menstruation.*

A girl in her thirteenth year was scalded in the ankle, which produced a troublesome ulcer in the part. At the time of menstruation the discharge was by this ulcer alone, and has continued so, at regular periods, for some years: the discharge is guttatim, and is regularly preceded by pain in the head and loins.

A laundress in the Temple, who is married, has never had children, and was healthy and regular till an accident happened which laid the foundation of her present complaint; she had last winter a fall down stairs, and struck her loins against the edge of a pail which she was carrying; a large discharge of uterine blood came on, attended with a prolapsus: this continuing and increasing, alarmed her greatly.

By the advice of a nurse she applied cold vinegar to the prolapsed uterus, and drank it in large quantities; the hemorrhage was suddenly stopt and succeeded by mania. It should

ſhould have been obſerved, that at the time of ceſſation the profuſe diſcharge had continued about a fortnight.

By medical treatment the mania went off in about a week, and a diſcharge of frothy blood, in copious ſtreams, without any cough or other effort, took place from the mouth and noſe. This diſcharge has ever ſince recurred regularly at the uſual periods of menſtruation, preceded by a ſlight tumefaction at the hypogaſtric and lumbar region; but no uterine evacuation has ſince taken place: the prolapſed uterus is ſuſpended by a peſſary.

The hemorrhage frequently occurs at other than the ſtated periods, eſpecially when the exerciſes of her employment are unuſually fatiguing; her legs ſwell occaſionally, and ſhe is much weakened by the diſcharge when profuſe.

She occaſionally applies to me to take a ſmall quantity of blood from her arm, by advice of the practitioner under whoſe care ſhe is; is but little fallen away from being rather fat, and ſoon recovers her complexion after the hemorrhage ceaſes.

October 27. Dr. SQUIRE, F. M. S. communicated the following *Case and Dissection.*

A middle-aged gentleman, about seven years previous to his death, complained (to use his own words) of a darting pain frequently shooting from the right ilium obliquely towards the region of the bladder, and of being very uneasy when lying on his right side: his urine at that time had the appearance of white coloured flakes floating in it, but so light as not to subside to the bottom. He complained of irritation, and pain at the neck of the bladder, and soreness in the urethra, with a frequent desire of making water; his efforts to that purpose being followed by a very small discharge of urine, and often without any. These symptoms were more urgent when in bed. From the first attack his disorder increased, for the space of between three and four years; but during that length of time he was so happy as to experience some comfortable and considerable intervals of ease. In the summer of 1774, the symptoms recurred with more force than he had at any time before felt them.

The

The difcharge now was of a dark brown coloured vifcid mucus, which fubfided in his urine, and was fo ropy and tenacious, that it was with difficulty feparated from the bottom of the containing veffel. Added to his former complaints he had a forcing on the neck of his bladder, and at times a fuppreffion of urine for many hours, with a perpetual defire of making water; but, after repeated trials, the difcharge was very inconfiderable.

Appearances on opening the body.

The abdominal vifcera, in general, had their natural appearance, the ftomach, liver, fpleen, pancreas, inteftines, &c. with the kidney of the left fide; but that of the right was nearly twice the fize of the other: and on opening the pelvis of that kidney a difcharge iffued of an opake brown coloured fluid, of about two tea fpoonfuls; the ureter on that fide more dilated than the left; the urinary bladder contained above half a pint of a fluid exactly refembling what was found in the difeafed kidney; the internal furface of the bladder had its natural fmooth polifhed look, and exhibited no morbid appearance, excepting fome flight inflammatory ftreaks.

ſtreaks. The internal ſurface of the urethra was perfectly ſmooth, without the leaſt veſtige of ulcers or ſtrictures.

OBSERVATIONS.

From the ſymptoms of this caſe, and the appearances on diſſection, I ſubmit the following queries.

Was not the original ſeat of the diſorder and the cauſe of the ſubſequent complaints in the diſeaſed kidney?

Was not the darting pain from the right ſide to the bladder, owing to the acrimony of the diſcharge from the diſeaſed kidney?

Might not the pain, when lying on his right ſide, be occaſioned by preſſure on the diſtempered kidney?

Might not the irritation and pain with the forcing on of the neck of the bladder, frequent deſire and difficulty of making water, with ſoreneſs in the urethra, proceed from the acrimony of the fluid diſcharged from the kidney into the bladder?

Might not the diſcharge of mucus be owing to the ſame cauſe above mentioned, inflaming the internal ſurface of the bladder, it being a well known fact, that great diſ-

charges

charges happen from various parts of the human body from inflammation, ſolely without ulceration, or even loſs of ſubſtance?

Would not the ſymptoms of this caſe have induced practitioners to imagine the ſeat of the diſorder to be ſought for in the urethra, neck of the bladder, or internal ſurface of that viſcus?

Can the appearances mentioned warrant any other opinion, than that the diſeaſe originated from the diſtempered kidney, and was the cauſe of all the ſubſequent ſymptoms?

September 15, 1788. *Account of a Rupture of the Urethra, and of a Solution of a Catgut Bougie in the Bladder.* By ROBERT WARING DARWIN, of Shrewſbury, M.D. F.R.S. and C. M. S.

Many caſes have been related to me of a diſeaſe ſuppoſed to have been a catarrh of the bladder, or a ſuppuration of the proſtate gland. In one, the patient died tabid from the purulent abſorption; in another, from a ſudden eryſipelas and mortification of the ſcrotum and parts in vicinity; and in another, the patient was recovered by the uſe, as was ſuppoſed, of a grain of opium taken at firſt

 twice

twice a day, but afterwards increaſed. The caſe I am now going to relate, gave me further light into this kind of complaint; and has perſuaded me that it is probable no ſuch diſeaſe as a catarrh of the bladder ever exiſts.

Mr. ———, about forty years of age, had during many years laboured under a difficulty of making water, inſomuch that for two or three years together he never paſſed his water without previouſly introducing a bougie. About five years ago, he had at intervals a great quantity of a purulent ſediment in his water; generally ſome clear urine came firſt, and then a tea-cupful or more of thick matter, which was ſometimes ſo thick as to have the appearance (as he expreſſed it) of liquid chalk. This matter always came along with his urine, and was attended with conſiderable pain; but ſometimes, for a month or two, the quantity of the diſcharge would be leſs, and again at times much encreaſed, along with the difficulty of making water and pain. On drying ſome parcels of this matter on paper, it had a chalky appearance, which induced the patient to ſuſpect it was the gout in the bladder. He had, during three years, occaſionally, cold ſhivering

ing fits, which were termed ague fits; and for which he took peruvian bark, as he supposed, with advantage; but was always free from hectic fever: which circumstance was ascribed to the ready discharge of the matter.

During the long continuance of this disease many things were tried, and he consulted the most eminent surgeons in London without information or advantage. A stone was suspected, but not discovered; as an eminent surgeon in London endeavoured, in vain, at this time, to introduce even a bougie past the obstructed part of the urethra, and the prostate gland was said to be hardened and enlarged. He found some relief by using a warm fomentation every night for an hour or two, by taking small quantities of opium, and by supping upon a pint of milk, flavoured with bitter almond and sugar, in which was dissolved half an ounce of isinglass.

After about five years the disease manifested itself by a permanent tumour in the perinæum, which broke externally, and the urine came along with the matter by the orifice. After it thus broke, he could never introduce a bougie beyond the wounded part,

part, ſo that the cure was left to unaſſiſted nature. The urine through the wound leſſened by degrees; and, after ſome months, the hard ſinus which was there formed, gradually diſappeared, after having healed ſuperficially, and opened again, many times: and, what is a very uncommon event, the obſtruction in the urethra at the ſame time vaniſhed by degrees, and he has now, for more than a year, been perfectly free from all complaint; and not only makes water freely, but is able to ride on horſeback with eaſe, which he had not done for many years.

I think proper to add, that the above patient had almoſt from his infancy been troubled with aſcarides; which were once ſuppoſed to have been ſubdued by a ſpontaneous diarrhœa, but recurred in ſome weeks.

1. From this inſtructive caſe I think it may be fairly concluded, that the ſtricture or caruncle in the urethra was the original cauſe of the whole diſeaſe; that by the obſtruction there given to the exit of the urine, the force to exclude it became exerted more violently; and thence the part of the urethra behind the ſtricture became diſtended, till it was at length ruptured. After this, the

urine

urine was preſſed into the cellular membrane, and diſſected its way, till a large ſurface became ulcerated. The ſame efforts which were uſed to exclude the urine, would preſs the matter out of this extenſive ulcer; and ſome urine would alſo at times be preſſed into it. Hence the matter always appeared mixed with the urine, and the ſmarting pain was urgent at the ſame time.

2. We may conclude, with great probability, that the patient who died conſumptive from the abſorbed matter, as mentioned above, might have been ſaved for the preſent by proper punctures to have given exit to it; and that the eryſipelas and mortification in the latter patient, might alſo have been prevented or cured by a puncture or two, ſo made as to have evacuated the intermuſcular or anaſarcous urine, the irritation of which was probably the immediate cauſe of the eryſipelas and conſequent mortification.

3. That the cure of theſe caſes, ſuppoſed to be catarrhs of the bladder, or ſuppurations of the proſtate gland, may moſt ſucceſsfully be undertaken by the aſſiduous uſe of bougies of catgut, which ſhould be gradually

enlarged

enlarged till a free paſſage for the urine be obtained. And if any tumour from extravaſated urine can be perceived and opened externally, the patient will be ſaved and the cure facilitated; ſince by theſe means ſufficient time might be gained to diminiſh or deſtroy the ſtricture, or caruncle, by the uſe of bougies. The patient whoſe ſucceſsful caſe I have deſcribed, when the urine paſſed in part through the ulcer, and he was able to force ſome through the narrow part of the urethra, voluntarily and carefully ſtopt the farther violent exertions of the veſical and abdominal muſcles, and was always very ſolicitous to let the urine paſs on in a ſmall ſtream, that leſs force might be exerted againſt the ruptured part of the urethra. This he thought contributed much to his cure.

4. Could the irritation of the aſcarides in the rectum inflame the membrane of the urethra by ſympathy, and thus be a remote cauſe of the ſtricture or obſtruction? I have twice remarked a polypus in the noſe in children, who were both much tormented by aſcarides; which, as well as other inteſ-

tinal

tinal worms, occaſioned by ſympathy an itching in the noſtrils.

5. Were not the ſhivering fits owing to the urine inſinuating itſelf farther into the cellular membrane, and thus producing new ſuppurations? and the more, as they never recurred after the ulcer was open, and permitted the paſſage of the urine through it?

Solution of a Bougie in the Bladder.

The patient above deſcribed, who had been accuſtomed to uſe bougies always before he made water for two or three years together, fell aſleep with one of them in his urethra. The bougie was ſimply a piece of catgut, which from its ſoftneſs, when moiſtened, is liable to preſs forwards without being perceived. On waking next morning he miſſed the bougie, which could no where be found by the moſt diligent ſearch. He continued the uſe of bougies as formerly, always before he made water; and thought he frequently felt a preſſure about the neck of the bladder. At the end of about four months, ſome filaments began to come away with his

urine, and ſometimes ſtopt the ſtream of it for a time. Afterwards larger pieces of the catgut were voided of an inch long or more, which were untwiſted and ſeparated as if by putrefaction; and in a few months the whole was thus evacuated. He put ſome catgut into a bottle of water, which became very putrid, and, upon ſhaking the phial, obſerved it to ſeparate gradually into ſimilar pieces.

This circumſtance furniſhes us with a powerful argument in favour of the uſe of catgut bougies, in preference to thoſe made of linen, ſince if by any accident one of them ſhould ſlip into the bladder, it will diſſolve (being an animal ſubſtance) by ſpontaneous putrefaction; and probably by that very proceſs prevent the formation or depoſition of the calculous matter upon it, which is ſo liable to incruſt other extraneous bodies that have accidentally got into the bladder.

1788.

January 1. *The following Relations, communicated in a Letter to Dr. Lettſom, by* Mr. Richard How, *of Apſley, in Bedfordſhire, were read.*

The daughter of a clergyman at Nottingham was, until ſhe arrived at the age of thirteen years, of a very dark complexion, with hair black as jet; when, to her great ſurpriſe, on riſing one morning, ſhe obſerved a lock of her hair, about an inch and a half in breadth, to be changed perfectly white. Previous to the change ſhe had enjoyed a good ſtate of health, and at that time had no indiſpoſition, or received any fright to which it might be attributed. Soon after a ſimilar change took place on the oppoſite ſide of her head, the left; and, continuing to alter, her hair appeared in ſtripes of black and white, and, gradually changing, in about ſeven years it became all over white. Her complexion underwent a ſimilar metamorphoſis, and at length became perfectly fair; a beautiful mixture of red and white.

Her eyebrows ſtill continue black, the laſhes are white. The colour of her eyes, which

which were black, has not undergone any alteration.

She has not enjoyed ſo good a ſtate of health ſince the change as before; ſhe is now, 1787, about twenty-five years of age.

I have within theſe few days been informed of an extraordinary girl at Shefford in Bedfordſhire, and requeſted a friend to procure me the particulars. By his account it appears, there had been much exaggeration in the report; I ſhall confine myſelf to a ſimple relation.

Maria Seeley is about eight years old, her father of a browniſh complexion, the mother rather fair, as are four of the five children now alive out of ſeventeen. Maria's face is of a ſwarthy colour, with long dark hair on one ſide of her head, ſhort frizled, and lighter on the other; her mother ſays her body is of two colours, the one ſide very brown, the other fair: ſhe can give no account of the cauſe whence this remarkable difference proceeded, not being conſcious of any thing particular, as a fright, &c. having happened during her pregnancy, whereby it might be occaſioned. Encloſed are ſpeci-

 mens

mens of the hair. The girl was ſome time ago in London, and ſeen by a gentleman of the faculty, who ſaid, if her parents would ſtay with her ſome time, he did not doubt getting them a conſiderable ſum; but they would not conſent to expoſe her as a ſight. This the mother told my friend.

January 11. *The following Extract of a Letter from* CAPTAIN CARDIN *to* Dr. LETTSOM, *was read.*

Having, during the courſe of ſeveral voyages to the coaſt of Africa, experienced the very great excellency of the powder of Ipecacuanha in eradicating the dyſenteries or fluxes ſo incident to that climate, I have taken the liberty to tranſmit ſome ſmall remarks thereon to you.

About four years paſt, I was ſome time trading in the Senegal River, when moſt of my officers and crew were afflicted with this cruel diſorder, and ſeveral of them were reduced to a moſt emaciated condition; at this time I recollected this powder had been recommended to me, and was induced to try it—nor was a month elapſed before I had recovered entirely the health of all my crew.

In my next voyage I was equally ſucceſſful; and, although I had moſt of my people, at different times, totally incapable of ſhip duty, yet by the application of this a cure always ſucceeded: and, though I have uſed the trade ever ſince, I have never once been diſappointed by it.

The manner I adminiſtered it was, if the diſorder was violent, attended with excruciating pains, I gave the patient four grains of this powder in a cup of weak tea, with fifteen or twenty drops of laudanum going to bed; this cauſed a ſickneſs at the ſtomach, though not ſufficient to excite vomiting; and the patient generally found much relief in this doſe.

The next morning, if the patient was eaſier, I reduced the quantity to three grains, and then to two, morning and evening; which I continued till every ſymptom of the diſorder was eradicated, enjoining the patient to make his general diet of rice gruel.

I am, Sir, your very humble ſervant,

J. CARDIN.

St. Thomas Apoſtle,
Jan. 11, 1788.

April

April 7. *Case of the Humerus of a Child torn from the Scapula by a Mill. Communicated by* HENRY GORE CLOUGH, M.D. *and* F.M.S. *Old Compton-Street, Soho.*

MARY FILBY, aged eleven, was brought to the Middlesex Hospital on the 27th of April, 1779, with her left arm and scapula torn from her body, by means of the arm being caught in the wheels or pullies of a callender mill (in endeavouring to get at a shuttle-cock, which was accidentally thrown on the top of the mill while at play), by her arm winding round it.

There had been a considerable quantity of blood effused on her clothes that were wrapt round her at the time; but when she was brought to the hospital, which was near half an hour after the accident, the hæmorrhage had entirely stopped, owing, as was supposed, to the considerable retraction of the vessels within the integuments; she had, however, sufficient strength to allow her to walk across

the court from the coach to the hoſpital, being nearly the diſtance of 32 yards *.

The integuments were pretty evenly divided, and a ſufficient quantity of ſkin was left to form a good cicatrix; the clavicle was left in its natural ſituation, but that end which articulates with the proceſſus acromion ſcapulæ, was laid bare as far as its perioſteum, with the cartilages and ſome looſe

* Though much cannot be adduced from this extraordinary and ſingular caſe, yet it ſeems here worthy of remark, and deſerves to be recorded with thoſe other two caſes which are analogous to it, namely, the one, as deſcribed by Mr. Cheſelden in his Anatomy of the Human Body, wherein he obſerves, "that a cure was completely "effected, without the leaſt appearance of any hæmorr-"hage and without any blood-veſſel being taken up;" the other, as deſcribed to have more recently happened, by Mr. James Carmichael, ſurgeon at Port Glaſgow, in the fifth volume of the London Medical Commentaries, in the year 1776, who there remarks, "that not a drop of blood had enſued on this diviſion:" in both caſes, as well as the one here alluded to, it ſeems alſo worthy of obſervation, that little or no hæmorrhage ſhould have enſued from the body ſuſtaining ſo great an injury as the loſs of ſo principal a member; and more particularly in this inſtance which I have here related of this girl, "to have "been able to walk ſo great a diſtance *after the accident*."

cellular

cellular membrane, &c. Over the extremity of the clavicle, or rather posterior to it, was left a narrow, irregular flap of skin, about an inch and an half in length. The large vessels were not to be seen, but some nerves were drawn out of the arm, the principal of which hung down about eight inches or more in length *.

The arm, which was not brought to the hospital for some considerable time, being carried to a neighbouring surgeon, was not without some little difficulty obtained. I procured a drawing to be made of it. On examining it, the integuments were found to be divided in the axilla, close to the tendons of the latissimus dorsi and pectoralis major muscles, and the separation carried on a little obliquely upwards to the middle of the deltoid muscles, about a quarter or one eighth of an inch from its insertion to the processus acromion scapulæ; from thence it was continued, nearly in a straight line, as far back as the middle of the teres major muscle, and

* In the case above mentioned by Mr. Carmichael, the nerve, which also hung from it, was four inches in length.

then

then directly downwards into the axilla, keeping close to the tendon of the latissimus dorsi.

The skin was divided almost as evenly as if it had been done by a scalpel *.

The pectoralis major was torn through about an inch and an half from its insertion into the os humeri and latissimus dorsi muscle, just where the tendon begins to be blended with that of the teres major, and about an inch of the pectoralis minor was left attached to the processus coracoides scapulæ; the anterior portion of the deltoid, which is attached to the clavicle, was torn through so low down, as to expose the capsular ligament of the joint immediately over the groove formed in the head of the humerus for the passage of the tendon of the biceps muscle; the middle portion remained fixed to the processus acromion, the posterior portion was detached from its insertion the whole length of the spine of the scapula, which was entirely divested of its periosteum, and appeared rough, as if the part of the bony matter

* In the same case the soft parts were divided as circularly down to the bone as if done with a knife.

had

had been torn up with the muſcle. The ſupra-ſpinatus muſcle was detached from the whole of its inſertion at the baſis of the ſcapula, and from the ſpine, about an inch forwards. The infra-ſpinatus was alſo detached at the baſis, for an inch below the ſpine, and from the ſpine it was detached nearly two thirds of its length; both theſe muſcles were jagged, having ſome of their fibres irregularly turned up, while others remained at their inſertions. The ſubſcapularis muſcle was detached from its inſertion at the baſis of the ſcapula, more than one third of its length, beginning at the ſuperior angle, and ſome layers of its fibres were turned up, and jagged in the ſame manner as thoſe of the infra-ſpinatus muſcle; the ligament paſſing over the ſemilunar notch in the ſuperior coſta ſcapulæ, and that going from the proceſſus coracoides to the acromion, were both laid bare; the ſuperior angle of the ſcapula, and that portion of its ſurface from which the muſcles already mentioned were ſeparated, was entirely diveſted of its perioſteum; the whole length of the ſcapula was laid bare, as if it had been ſcraped, and for two

two thirds of its length the cartilaginous edge was torn off.

There was a fracture running from the superior costa scapulæ midway between the angle and the semilunar notch, obliquely downwards and backwards to nearly the middle of the basis.

A small portion of the inner condyle of the humerus was broken off, and on examining the artery in the arm, it was found to be considerably retracted within the integuments, and appears to have been divided immediately below the subscapularis muscle. and just before it sends off the large branch in which surrounds the head of the humerus. As the trapezius muscle is inserted into the spine of the scapula nearly its whole length; the rhomboides-major and minor into the whole of the basis externally; the serratus-major into the whole of the basis internally, and also folded strongly round the angles, the levator scapulæ into its superior angle; it is a curious circumstance, that notwithstanding the strength of all these insertions, as also of their various directions, that the scapula should be brought away without a single fibre of either of the above muscles accompanying it,

it, but the bone entirely ſtript of its periosteum at every part of their attachment.

April 27. The treatment of this caſe, which came under Mr. Wyatt's care*, was merely ſuch as to moderate the ſymptomatic fever, keeping the body open by clyſters, and giving her the hauſt. ſalin. limoniat. 6ta quaque hora, et in hauſt. nocturn. tinct. opii gtt. xv. ad xx.

May 4th, Tueſday. The ſuperficial dreſſings were now removed (being a week ſince her admiſſion), when the ſkin which covered the ſcapula was found to have granulated, and united by preſſure of the bandage; the nerve, which was alſo drawn out of the arm, had begun to granulate; all, except a quarter of an inch near the extremity where it was torn off, was ſloughing away.

6th and 8th. The ſuperficial dreſſings were continued as before, the wound ſtill granulating, and forming a good cicatrix.—Hauſtus et enema continuantur, 6ta quaque hor.

* N. B. Mr. Wyatt was of opinion, why the principal nerve was drawn out to ſuch a length was, from that part of it at the elbow being caught by the ſmall portion of the condyle, which was before mentioned to *have been fractured.*

10th.

10th. A ſlight degree of fever came on, with a quick pulſe.—Hauſtus repetantur.

18th. The ſymptomatic fever was this day more conſiderably abated, and the pulſe regular, and continued ſo till the

27th, when the wound, having properly digeſted, and completely cicatrized, in leſs than ſix weeks ſhe received her diſcharge from the hoſpital, being then in a ſtate of convaleſcence.

EXPLANATION of the PLATE,

From the Drawing of the Arm* now in the Poſſeſſion of H. G. Clough, M. D. and F. M. S.

FIGURE I.

Shews the Front View of the Arm.

A. A. A longitudinal inciſion, made through the integuments, ſhewing the retraction of the brachial artery.

B. B. The adipoſe, or cellular membrane.

C. C. C. The abraſion of the cuticle, on ſeveral parts of the arm.

D. D. The ſubclavian nerve.

* The arm from which this drawing was taken is in the poſſeſſion of Mr. Wyatt, ſurgeon, Eſſex Street, to whom I am under infinite obligations for his permiſſion in publiſhing this caſe in theſe Memoirs, ſhe being his patient.

Fig. 1.

Fig. II.

Darton & Harvey sc.

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E. The ſuperior angle of the ſcapula, diveſted of its perioſteum, and laid bare from all muſcular attachment, with the cartilaginous edge torn off.

F. A fracture, running from the ſuperior coſta ſcapula obliquely downwards, and backwards near to the middle of the baſis.

G. The inner condyle of the humerus broken off.

H. H. H. H. The lacerated ends of the ſeveral muſcles lying on the inſide and outſide of the ſcapula, with their fibres irregularly turned up.

I. The brachial artery.

FIGURE II.

A. The head of the humerus.

B. B. The abraſion of the cuticle.

C. The adipoſe membrane.

D. The fracture of the ſcapula.

E. E. The lacerated and jagged extremities of the ſeveral muſcles.

April 7. *Caſe of a Man who took by Miſtake two Ounces of Nitre inſtead of Glauber's Salt. By* WILLIAM FALCONER, M. D. F. R. S. C. M. S. *&c. Bath.*

WILLIAM WEETCH, a robuſt, healthy man, aged 26 years, by trade a blackſmith, having been accuſtomed to take in the ſpring a doſe of

of Glauber's ſalts, took for them, by miſtake, on the 8th of May, 1786, two ounces of nitre diſſolved in about half a pint of warm water. It affected him almoſt immediately with great pain of the ſtomach, which ſoon extended to his bowels. In about half an hour's time he began to vomit, which he continued to do with great violence, but found from it no relief of his pain, but rather an increaſe. To eaſe this he took two glaſſes of brandy, but without any good effect. After the vomiting had continued two or three hours, he began to throw up blood, which he did to nearly a quart in quantity. He was ſoon bowed forward, and unable to raiſe himſelf without violent pain. An apothecary was then ſent for, who gave him oatmeal gruel and butter in large quantity, which afforded him ſome eaſe. He had no purging after it, but was, on the contrary, coſtive, for which he had ſeveral clyſters injected. His urine was not affected any way, nor had he any pain in the urinary paſſages. When he was admitted into the Bath Hoſpital, which was on November 3, 1786, he was troubled with great pain and ſoreneſs of the ſtomach, attended with much flatulence,

flatulence, and a flux of ſaliva in the mouth. His urine was in ſmall quantity, but his body regular in point of ſtools. His pain and flatulence were worſt at night, which often prevented his lying down. In other reſpects he was tolerably healthy. He was ordered to drink the Bath waters in ſmall quantities, taking a little tinct. cardam. with each glaſs. He alſo took a drachm of ſpir. nitri dulcis, with half a drachm of elix. paregor. twice a day to excite the urinary ſecretion. He uſed the bath twice a week. On the 14th of February, 1787, he was diſcharged *cured.*

September 15. *Extract from a Hiſtory of a Sphacelated Scrotum.* By JOHN CHURCH, M. A. Surgeon, and F. M. S.

This patient was ſeized with pain and heat about the anus, which were ſucceeded by inflammation, that ſurrounded the anus, and extended downwards along the perinæum to the ſcrotum: this was the ſecond attack of his complaint; the firſt which he had was a year before, and gave way ſpeedily to bleeding, purging, and ſaturnine lotions;

 the

the ſame method was adopted on this occaſion, but without the like good effects: the inflammation increaſed rapidly, and the plan was changed for warm fomentations, and cataplaſms, to expedite ſuppuration; but this event did not take place; for on the tenth day appearances of mortification came on, and the tumefaction greatly increaſed, and took in the whole of the ſcrotum, which became much enlarged: his pulſe was languid and irregular; his thirſt and anxiety great. The gangrenous parts were ſcarified, warm fomentations were continued, and fermenting cataplaſms applied. Bark with wine, and cordial confection were liberally taken. On the twelfth day there was great debility; his extremities were cold, and the ſkin was covered with a clammy moiſture. The gangrene now occupied a ſpace of three inches on one ſide of the anus, under and on both ſides of the ſcrotum, up to the penis. A thin and very fœtid diſcharge iſſued from the ſcarifications. On the fourteenth day a diſpoſition to ſeparate took place, and by the 19th the ſloughs were removed, which were formed of the whole ſcrotum, and coats of the teſtes; theſe were left naked;

and

and they had a diseased, pale, and unfavourable appearance: about this time inflammation and pain occurred in the right groin, five inches in extent, in the direction of the spermatic chord; the next day a livid spot appeared in the middle, which sloughed off in a few days, and with it was drawn out a long string of a sloughy substance, too firm and thick to be cellular substance, and which left a sinus the length of a probe, but which healed without trouble. At this time he was also attacked with a diarrhœa and tenesmus, which were long troublesome, but they gave way to rhubarb, philonium, opiates, and cordials. In about a month the edges of the remnant of the scrotum began to adhere to the testes, which threw out granulations from their surface, and were soon healed and covered, without any other inconvenience than a slight disagreeable sensation, from the tightness of the parts: towards the end of his cure, he had a violent cough, and expectorated a pint of white frothy mucus daily, which much reduced him, but it gave way to bark and myrrh, and he perfectly recovered.

Prior to this disease he had been subjected to vertiginous complaints, but ever since has been free from them.

September 15. *The following Case of Pemphigus,* by J. UPTON, *was communicated by* Dr. LETTSOM.

Mrs. D——, aged thirty-four years, rather of a delicate conſtitution, on the 22d of November, 1787, complained of a conſiderable itching, and uneaſy ſenſation on different parts of the ſurface of her body; and on the ſame evening, three large veſicles, containing a ſerous fluid (ſome of which were as large as the ſection of a lemon), appeared upon her left hand and arm, attended with ſome tumefaction of the ſubjacent parts, and much pain. The heat of the body, pulſe, and appearance of the tongue, were natural. Upon diſcharging the fluid from the bliſters, the pain became eaſier, and by the uſe of emollient applications, the ſymptoms diſappeared. She was four months gone with child, and previous to this attack, had ſuffered much fatigue both of body and mind, which brought on languor, a bad appetite, headach, profuſe uterine hæmorrhage, and much conſequent debility; from this ſtate ſhe was recovering when this cuticular affection took place. On the 23d of the ſame month, a freſh

freſh crop of veſicles appeared upon the arm and cheſt, attended with heat, quick pulſe, and a great dejection of ſpirits. Bleeding, a ſpare regimen, and a cooling plan, were uſed till the 26th, when her pulſe was much quickened, her ſtrength diminiſhed, and ſhe had no ſleep during the whole time. By further medical advice a more generous diet, and an opiate were directed.

On the 27th the ſymptoms were increaſed, and a bliſter was applied between the ſhoulders.

On the 28th ſhe was much relieved, and in better ſpirits: ſhe continued in this manner with little alteration, unleſs a veſicle appearing now and then, on different parts, until

December 1, when ſhe complained of ſoreneſs in her throat, extending to the ſtomach, with depraved taſte, and difficulty in ſwallowing her food: ſhe had great languor, not much increaſe of bodily heat, but had a pain on the ſtomach and bowels on external preſſure. She was ordered the bark with a nutritious diet; which plan was continued until near the middle of the month, when ſhe had a gradual but ſlow re-eſtabliſhment of

of her health. In the latter ſtage of her pregnancy ſhe appeared uncommonly large in her body, and had ſwelled legs, with a ſcarcity of urine. During labour, and previous to the rupture of the membranes, a conſiderable quantity of water was diſcharged from the uterus; likewiſe the child, after birth, vomited a great deal of the ſame fluid, and had its whole ſkin in a ſtate of œdema. Sauvage gives a hiſtory of this diſeaſe under the title of *Pemphigus major*; but does not mention its ever attacking the alimentary canal.

I once before ſaw a caſe of this kind at Edinburgh, under the care of Dr. Gregory, where the patient had it in a ſevere manner both externally and internally, and had been afflicted with it once before.—Both times it was preceded by a vomiting of blood. The veſicles, putting on a gangrenous appearance, led the doctor to order the bark and wine freely; but ſhe could not uſe them in any large quantity, becauſe of a ſoreneſs in her throat, which grew daily worſe, until ſhe was obliged to be nouriſhed ſeveral days by glyſters, and take opiates: after which ſhe gradually recovered.

We

We have here two cafes of a fingular difeafe, not frequently occurring, nor fatal, but difficult of cure, viz. an external vefication of the fkin with fever, and an uncommon languor and lownefs of fpirits, arifing in a convalefcent, or previous debilitated habit; and I am of opinion that the application of bliffters at different intervals will relieve this languor and lownefs in a manner fimilar to their effects in miliary fever, as well as prove a neceffary anticipation of nature's operation in forming vefsicles, which, on appearing, always relieved the diforder.

September 29. A Cafe was read to the Society by Mr. STEPHEN SMITH WARD, Surgeon and F. M. S. of an *Obftruction of Urine which terminated fatally, in confequence of Stricture.*

THE patient, who was a middle-aged man, had been for fome years afflicted with complaints in the urinary paffage, attended with partial fuppreffions of urine, evidently referable to a contufion in perinæo; from which, when the fymptoms were more than commonly urgent, he was relieved by warm bathing, opiates, and anodyne clyfters. Afterwards,

terwards, on the obſtruction increaſing, nature effected her own relief by the ſeparation of a ſlough which covered a fiſtulous orifice communicating with the urethra, through which the urine eſcaped.

Some years before his death he uſed bougies, but without advantage, as they never reached the bladder. At length ſeveral fiſtulous openings formed; which, though they obviated any conſiderable diſtention of the bladder, yet, by the inflammation accompanying them extending itſelf to the contiguous parts, there forming abſceſſes, induced a train of ſymptoms, which deſtroyed him.

ON DISSECTION

The urethra was found perfectly obliterated for half an inch, at the diſtance of two or three inches from the glans.

September 29. Was read, *a Caſe of Calculi paſſing through the Bladder into the Rectum.* By J. Johnstone, M. D. C. M. S. of Worceſter.

Mr. A———, of Hardwich-forge, the father of a numerous family, had for many years

years ſuffered the moſt excruciating pains from gravel and ſtones in the bladder; and received no relief, but rather aggravation of pain, from the uſe of the late celebrated lithontriptics: the largeſt doſes of opium, whether taken into the ſtomach, or by clyſter, hardly gave any reſpite from pain.

Some years paſſed in this torture: he began at length, in ſearching his ſtools, to find pieces of gravel voided with them. I ſaw ſome of theſe pieces, and was perfectly convinced by their appearance, that they had come from the bladder, and had forced their paſſage through it and the rectum. Thebaic tincture was daily injected in oily clyſters to quiet the pain, till theſe pieces of gravel came away in his ſtools; and he has ever ſince been free from the pains which had tormented him for ſo long a time.

This kind of natural lithotomy, if I may ſo expreſs myſelf, is, I believe, not very common; but no one who ſaw this patient in the leaſt doubted that the ſtones, which had given ſuch pain in the bladder, had cut their way through the bladder and rectum, and, being diſcharged with the ſtools, the

4 wound

wound through which they paſſed had perfectly healed; for he is now a very healthy and vigorous old man.

October 6. A Paper, by Mr. BAKER, Apothecary and F. M. S. was read, containing *Various Caſes of Fatality from the natural Small Pox, in Families, where inoculation, when practiſed, had been uniformly ſucceſsful:* from which the following is extracted.

THE following diſmal Caſe is the third of diſeaſed joints after the *natural ſmall pox*, which has come within my knowledge; and which I beg the Society's permiſſion to lay before them:

Edward Hughes, born in the work-houſe of St. Bride, a healthy fine child, except having a little ſoreneſs in the eyes (whether from cold in the birth, or from what cauſe I know not), which continued troubleſome till he was about two months old, when he got quite well of that complaint; and continued a very thriving child to every appearance of perfect health, till the age of rather more than five months, when he was ſeized with the natural ſmall pox, and was then with the mother

ther out of the houſe, ſo that I have her account only of that diſeaſe: ſhe ſays he was a little feveriſh for a day or two; and that the ſmall pox came out ſo kindly, that ſhe did not trouble me or any one elſe. The puſtules were few, large, and full of matter, and were every where perfectly dried off by the ninth day, about which time the left elbow became inflamed very much; and after a few days a large ſuppuration took place in the cavity of the joint, which ſeemed, from the quantity of matter, to have perfectly ſeparated the natural attachment between the bones: hardly had this gone its length, but a ſimilar one took place in the other elbow, not leſs violent than the firſt.—In this ſtate the child was brought to me, October 2d. Poultices of bread and milk had been applied by the direction of the gentlemen of St. Bartholomew's hoſpital, where it had been taken for advice. It had then conſiderable ſymptomatic fever: ſaline, and gently opening medicines were now given, and the poultices continued.

About the 10th of October the tumor on the left elbow broke, and diſcharged a great quantity of ſmooth well-digeſted pus; and left the bones

bones ſo completely ſeparated, that the fore arm might have been twiſted round; and ſeemed almoſt in danger of being torn off by accident, from the total loſs of ſubſtance, except diſeaſed ſkin, and cellular membrane, which were very looſe and flaccid, from the previous tumefaction. Scarce had the miſchief begun in the right elbow before ſimilar inflammation appeared in both knees, and in each wriſt. The ſufferings of the poor little object are not to be deſcribed: it gradually languiſhed in this miſerable ſtate till October 17th, when it died, aged about ſeven months.

The day after its deceaſe, on opening the abſceſs in the right elbow, which was firſt examined, about three ounces of pus, free of the leaſt fœtor, was diſcharged, the cavity of which extended upwards, and round the os humeri, one third of its length downwards more than half the fore arm, including the ends of the bones formerly making the joint, of which the capſular and articular ligaments, with the cartilages, were quite deſtroyed, not a veſtige of them being left.

The left elbow, which had diſcharged purulent matter ſome days before death, was much

much in the ſame ſtate, only that the diſeaſe in its ravages had gone a ſtep farther; for, added to the above account of the other elbow, the ends of the bones had begun to be rough and diſcoloured; the diſcharge, we ſuppoſed, was as large as from the right. In the right knee the abſceſs was very large, though unconnected with the joint extending backwards on the head of the tibia, which, on its upper and poſterior part, was ſeparated from its epiphyſis, and was ragged and corroded. The joint itſelf was in a perfect ſtate.

In the left, as in the right knee, the abſceſs was unconnected with the cavity of the joint. The pus was rather larger in quantity, and laid chiefly on the upper end of the tibia, which entirely ſeparated its epiphyſis. The cavity of the joint did not appear much diſeaſed; neither was it entirely free from ſomewhat like inflammation; and the ſynovia, which did not exceed its uſual quantity, appeared as if a ſmall quantity of pus was mixed with it; ſtill retaining much of its natural feel. The cartilages and ligaments were ſound, ſmooth, and but little altered.

The right wriſt became the next object of our

our inquiry, when a ſmall quantity of the ſame ſmooth pus was found: the cartilage of the radius was corroded, and the end of the bone a little diſcoloured.

The left wriſt was in the ſame diſeaſed ſtate, but in a greater degree.—The articular cartilages and ligaments were deſtroyed; and the radius more diſeaſed than that of the other arm; the joints formed by the heads of the thigh bones and thoſe of the ancles were examined, and found perfectly healthy, as well as the abdominal and thoracic viſcera; but the meſenteric glands were rather larger and harder than they are commonly found: the body was not emaciated; for upon its ſurface was a very conſiderable quantity of healthy looking fat in the cellular membrane; nor did the epiploon want its ſhare.

October 6. *A Caſe of an Ulcer of the Bladder communicating with the Rectum*, by Dr. JOHNSTONE, of Worceſter, was read.

Mr. WYLDE, keeper to Lord Foley, aged about ſixty-three years, conſulted me about fourteen years ago, for a prophylactic method

thod to prevent the consequences of being severely bit by a mad dog; and, that method having happily succeeded, I learnt from him that he had, many years before, been subject to a diarrhœa, which continued to waste his strength and flesh in a slow and gradual manner.

In 1772 it grew worse, and with very particular circumstances: besides near twenty motions to stool every day, he often distinctly perceived flatus, or wind, discharged from the penis along with his urine; and a fortnight or three weeks before his death, he made no urine at all: it probably came away by stool. At last purulent matter was constantly observed in his stools. An ulcer in the rectum, the cause of the diarrhœa, had evidently, at length, perforated the bladder; and he died about the beginning of August, 1772.

December 15. *Case of a Rupture of the Bladder opening into the Pelvis*, by JAMES JOHNSTONE, M. D. &c. was read.

THE Reverend Benjamin Fawcett, long the worthy minister of a dissenting congre-

 gation

gation in Kidderminſter, had complained of gravel; at leaſt for years had made water with pain and difficulty.

After a journey in July, 1780, this pain and difficulty in voiding urine became extreme; and the diſcharge of urine ſometimes ſtopped altogether: he had alſo perpetually a quick feveriſh pulſe, conſtant thirſt, reſtleſſneſs, and want of appetite, with nauſea, and frequent vomiting. About three weeks before his death, his limbs became dropſical, and a circumſcribed tumor was obſerved to riſe from the hypogaſtrium, the ſeat of the bladder, nearly as high as the navel, which was believed to be the bladder itſelf diſtended with urine. He rejected the uſe of the catheter, as in one or two trials he had ſuffered extreme pain from its introduction, though directed by a very ſkilful hand: he took every kind of medicine adapted to remove inflammation, and promote the diſcharge of urine, with very little benefit.—External preſſure in applying embrocations ſeemed uſeful.

In the laſt three days of his life the diſcharge of urine became abſolutely ſuppreſſed, and the abdomen much tumefied: he

chose to submit to his fate rather than to the pain he felt in attempting to introduce the catheter; and he died on the 18th of October, 1780, in the sixty-sixth year of his age; when the body was opened: but a catheter being first introduced, three pints of urine were drawn off, of a highly putrid smell, which stained the catheter like sulphur. The substance of the bladder was much thickened, and had a fleshy, rather than a membranous appearance; it adhered on its forepart to the peritonæum, under the musculi recti, almost as high as the navel; and a circular hole, of the diameter of an inch and a half (which was smooth on its edge, and without any appearance of a recent laceration), was found in the left side, and opened to a cavity in that region of the pelvis, in which a large quantity of urine had lodged when the bladder was full. No calculus was found either in the bladder or in this præternatural cavity. The ureters and kidneys were much enlarged: a great quantity of putrid urine issued from the pelvis of each kidney when cut open.

An inflammation of an old date had probably occasioned the adhesion of the bladder.

 This

This prevented its regular evacuation, because the neceſſary contraction could not take place: hence iſſued the rupture and fatal iſchury.

October 13. *A Caſe of extraordinary diſeaſed Enlargement of the Parotid and Submaxillary Glands, &c.* was communicated by T. POLE, Surgeon, and F.M.S.

ELEANOR CRANFORD, about 47 years of age, naturally of a weak, delicate conſtitution, in about her thirty-ſixth year, firſt perceived the commencement of this diſeaſe by a ſmall tumor in the ſituation of the left parotid gland, which continued gradually to increaſe, though by very ſlow degrees, for ſeveral years; but within the latter ſeven months of her life it increaſed more than in all the preceding years, though at no time had been very painful until the laſt twelve months, during which ſhe has ſuffered ſeverely; but the pain was not ſituated in the tumor ſo much as in other parts of the head; and laudanum was her only relief, of which ſhe took in general from four to ſix ounces a week. Her pulſe during life

was

was low, weak, and quick, and frequently had a recurrence of febrile paroxyſms in the evening, with an increaſe of pain in the head. She had the catamenia regularly, until the laſt two or three years, during which period they entirely left her.

Her own opinion is, that the diſeaſe originated from a blow ſhe received in the part; which carries with it at leaſt the appearance of probability. At length the tumor increaſed to ſo prodigious a magnitude that it compreſſed the trachea, œſophagus, and blood-veſſels, and brought on a gradual ſuffocation, and which, after eleven years from its commencement, put a period to her miſerable exiſtence.

After death the tumor was diſſected from the face, and weighed ten pounds and a half: it appeared to contain every kind of ſubſtance which uſually fills ſteatoma, carcinoma, meliceris, atheroma, and lipome: in ſhort it was a maſs of putreſcent matter incloſed in cyſts, one or two of which had, before death, broken, and diſcharged its contents into the mouth; and no doubt muſt have greatly diſtreſſed her.

It appeared to have originated in a diſeaſe

of the parotid gland, and to have gradually ſeized on other glands of the face and neck. It conſequently had numerous attachments; and, from its vicinity to the left carotid artery (to which it appeared to be connected), the circulation muſt have been much impeded.

The tumor hung ſo low as to lie upon the left ſide of the thorax, and formed a conſiderable depreſſion in the ribs upon which it reſted; and the higheſt part of it was nearly upon a level with the crown of the head; it almoſt cloſed the left eye, and preſſed the noſe toward the right ſide of the face; it conſiderably elongated the left ear by dragging it laterally from the temporal bone.

The dimenſions of the tumor are as follows:

	Feet	Inches.
Largeſt circumference -	2	9
Longeſt diameter - -	1	1
Tranſverſe diameter -	0	11

November

November 10. Dr. ZENCKER'S, (from Berlin,) *Obſervations on ſome Species of Deafneſs,* ſucceſsfully treated, ſent to Dr. SIMS, and communicated to the Medical Society.

SIR,

MEN deprived of the ſenſe of hearing loſe a great deal of the happineſs of human life; and therefore an attempt to reſtore this faculty muſt be laudable; or even a hint on ſo intereſting a ſubject may deſerve further inveſtigation.

In peruſing the Memoirs of the Medical Society of London, vol. I. containing ſo many valuable and uſeful obſervations, I met with a treatiſe on deafneſs, publiſhed by you; and deeming the communication and promotion of knowledge the chief purpoſe of this inſtitution, I take the liberty of offering an obſervation taken from the late Mr. Schmucker's (a famous German ſurgeon) collection of chirurgical works relative to this kind of diſeaſe.

A man living in Sileſia was for a long time deaf of both ears: all remedies applied by a ſkilful phyſician having proved ineffec-

tual, he was left without relief, bearing his misfortune philoſophically. An inflammatory ſwelling afterwards roſe at the maſtoidæal proceſſes of each temporal bone: poultices and a gum plaiſter were applied; fluctuation was felt; and, after opening, a good pus was diſcharged; two days afterwards the pus became thin and ill-coloured, the ſurgeon diſcovered with the probe the bone naked and rough: the next day a decoction of bitter herbs was injected, and the injected matter partly came into the mouth: and in repeated trials ſtill more freely; the injection was carried on; four or five days after, the patient could hear a little; the power of hearing increaſed every day; a fortnight having elapſed, he could hear perfectly at that ear, and the wound ſoon cloſed. Encouraged by the ſucceſs attending this caſe, the ſurgeon, on the patient agreeing to his propoſitions, cut through the ſkin covering the maſtoidæal proceſs of the other temporal bone, and penetrated with the perforating trepan the external bony lamina covering the maſtoidæal cells: the above mentioned injections were had recourſe to, which alſo found

found their way through the euſtachian tube to the mouth; the patient ſoon began to hear likewiſe at that ear; and a fortnight after the hearing of this ear was as well as that of the other, and the wound was healed up.

This account, given as well as I remember, not having the book at hand, would be ſufficient to raiſe your attention; but I beg leave to add a few remarks:—the organ of hearing may be divided into the external and the internal part, ſeparated by the tympanum; in both may reſide the cauſe of the loſs of this noble ſenſe. Thick ear-wax in the meatus auditorius externus may eaſily be removed, and hearing reſtored; but various and very obſtinate are the affections of the internal ear, that is compoſed by the cavum tympani cohering with the maſtoidæal cells and the euſtachian tube, by the veſtibulum, cochlea, and canales ſemicirculares. Mr. Cruikſhank in his lectures mentioned that he cautiouſly had deſtroyed in dogs the tympanum, malleus, and incus; notwithſtanding which, the dogs retained the power of hearing: from thence he infers, that, when the ſtapes remains at the foramen-ovale, and the auditory nerve is unhurt, the hearing itſelf

can continue, though lessened; but destruction of the stapes, the nerve, the vestibulum, cochlea, and canales semicirculares, is attended by an irrecoverable loss of hearing. Now I approach nearer to the cause of deafness resulting from the faults of the eustachian tube, through which the currents of air, occasioning sound, get into the cavum tympani, by way of the mouth and nose. The several affections of this tube, and their origin, are very well explained in your treatise, and the proposed method of cure found successful in many instances, by expelling the air through the tubes, the mouth and nose being closed, claims a right of further experiment. But would not the effort of such a kind of expiration prove many times dangerous to the lungs and brain? I at least observed in such a trial a very great uneasiness, nay pain in the brain.

Mr. Wathen's method of injecting into the tube by the way of the mouth or the nose, can certainly be very seldom applied, because few patients can suffer the tickling of the nose in getting in the pipe of the syringe; and the most skilful surgeon will miss very often the opening of the tube. But the injection

jection through the maſtoidæal cells finds very eaſily the way to the cavum tympani, and further to the euſtachian tube, attenuates and detaches the thickened glutinous humour, and alſo the internal coats may be ſtrengthened, even ſmall coheſions may be ſeparated by the force with which the injection is thrown in. In the diſeaſe, called fiſtula lacrymalis, the injection of quickſilver in the obſtructed naſal canal is propoſed: could we not, perhaps, expect greater ſucceſs from its injection into the obſtructed ear? But I am doubtful whether the undivided maſs of the quickſilver, prevented from the paſſage through the cohering tube, could be abſorbed, or remain as a heavy and hurtful body: watery medicated fluids are doubtleſs abſorbed, and can perhaps be of uſe even in the affections of the other and more noble internal parts of the ear.

Permit me to ſubſcribe myſelf,

SIR,

Your moſt humble ſervant,

J. G. ZENCKER, *from Berlin.*

Holborn, No. 53.

November

November 17. *Abstract of a Case of Morbus Niger*, by Mr. KEY, Surgeon, in the Borough, communicated by Dr. LETTSOM.

The subject of this case was a man, who had for some years suffered much inconvenience from abscesses in the loins, about the region of the kidneys, which had been occasionally opened; purulent matter had been discharged with the urine; a stone passing into the bladder seemed to have occasioned these symptoms; but as he would not submit to an examination, it was not known with certainty till after his death. A tumour had likewise formed on the anterior and upper part of the scrotum, which had terminated in suppuration, and which on being opened discharged a large quantity of fœtid dark coloured pus.

A short time previous to his death he was seized with slight shiverings and tremors, which were succeeded by a very quick pulse, and a copious vomiting of dark coloured bile, accompanied with a fluid resembling blood; his stools had the same appearance; this discharge continued to increase till a period was put to it by his dissolution.

On

On diſſection the liver was found of the natural ſize; but in appearance it reſembled the ſpleen, and likewiſe wanted that firmneſs, which is uſual in that viſcus; on cutting into it, it had the appearance of a ſponge filled with bile and blood. The gall bladder was twice its uſual ſize, and filled with bile almoſt black. The ſtomach and inteſtines contained a large quantity of a fluid ſimilar to that he had vomited, and which had evidently paſſed from the gall bladder through the ductus choledochus.

The kidneys, ureters, and bladder, were very much diſeaſed; one kidney was inveſted with a very hard fleſhy ſubſtance, which was evidently the effect of inflammation, and readily pointed out the ſeat of thoſe abſceſſes which had been formed in the loins. A calculus was found in the bladder, which weighed more than one ounce and a half. The other viſcera were in a healthy ſtate.

January 9, 1789. *Abſtract of a Caſe* communicated to the Society by Mr. THOMAS EDWARDS, of Peckham, Surgeon.

The patient was a woman near 70 years of age, in whom, from long confinement to her bed,

bed, a large ſphacelation had taken place on the region of the os ſacrum; from this ſhe was recovering, by the aſſiſtance of fomentations, and the internal uſe of bark, when a ſevere and obſtinate diarrhœa attended with hiccough came on; to relieve this complaint, twelve ſcruples of the ſpecies of ſcordium with opium, a mixture of chalk-julep with one hundred drops of thebaic tincture, and thirty grains of ſolid opium were given daily, and continued for near a fortnight before any change took place; the ſlough then gradually ſeparated, part of the bone exfoliated, the diarrhœa ceaſed, and the patient ſoon recovered perfect health.

Extract from a Deſcription and Diſſection of a diſeaſed Spermatic Vein, by THEOPHILUS DYSON, Surgeon, and F. M. S.

A lady of a thin but healthy habit, and who had borne ſeveral children, was firſt attacked with a pain on the left ſide of her abdomen in 1762, after being ſhook in a coach; there was no enlargement, or tenderneſs to the touch; ſhe was alſo frequently troubled with pains in her ſtomach and in-

teſtines, which were ſuſpected to ariſe from worms, and for which medicines were given; and ſhe diſcharged ſeveral of the round kind. About three or four years after ſhe took fern root powdered, and voided a tape worm about ſix yards long. Theſe complaints left her, excepting the pain in her ſide, which irregularly recurred with violence, and gave a ſenſation as if ſomething was alive, and upon applying the hand a pulſatory *motion* was felt; during ſeveral years ſhe took the advice of a great many practitioners, who generally treated her for worms, without any diminution of this pain, or ſenſation; violent purges increaſed them, and kept her thin. She continued in this ſtate until her death, which happened in 1785, and which was in her 82d year. Thus far Mr. D. acknowledges himſelf indebted to Mr. Price, of Fore-ſtreet, and then proceeds to ſtate the appearance which he diſcovered upon opening the body. The omentum he found nearly deſtitute of fat; the inteſtines free from fæces, air, or *worms:* upon diſplacing the inteſtines from the left to the right ſide, an enlarged veſſel appeared running from the kidney towards the pelvis,

about

about the ſize of a finger; on tracing it on the uterus, he found it to be the ſpermatic vein, which paſſed on from the uterus and joined the left emulgent vein; he removed it and laid it open; and through its whole extent it was filled with a grumous ſubſtance; it appeared laminated; every other part of the uterine ſyſtem was in a ſound ſtate.

December 29. *A Caſe of Encyſted Tumor ſucceſsfully treated by Electricity.* By Wm. Turnbull, A. M. Surgeon to the Eaſtern Diſpenſary, and F. M. S.

In the month of June laſt, the parents of Iſaac Levy, a fine healthy boy, between eight and nine years old, conſulted me for a tumor, about the ſize and figure of a ſparrow's egg, ſituated in the middle of the cheek, perfectly detached from the ſurrounding cellular ſubſtance, which had firſt made its appearance three months before, and gradually increaſed from the bigneſs of a ſmall pea, to that above mentioned. On firſt ſeeing it, I declared it encyſted, poſſeſſing all the leading

traits

traits of thoſe ſwellings termed ſo; viz. *a hard, incompreſſible, circumſcribed, and moveable tumour, free from pain and without diſcoloration.* I adviſed the immediate exciſion of it, as the only method of relieving my young patient from this growing deformity. The mother rejecting this propoſition, determined me to make trial of ſome remedies before we had recourſe to the knife, more with the intention to amuſe, than expecting any good reſulting from them. In my attempts to remove this tumor, I had two ends in view, the firſt was to adminiſter ſuch medicines as might be productive of its diſſolution, and in caſe no ſucceſs ſhould attend the attempt, I might in the next place have recourſe to thoſe applications which would bring on the ſuppurative proceſs. For the firſt of theſe purpoſes ſmart purges of calomel were recommended to be given him every two days, at the ſame time directing the part affected to be frequently anointed with the ſaponaceous liniment. This practice was purſued with attention for a month, but the ſwelling rather increaſing than diminiſhing, I was induced to uſe the ſecond method propoſed, by endeavouring to produce a ſup-

a ſuppuration. In order to effect this, the Peruvian bark, with ſmall doſes of calomel, were preſcribed; the tumor was kept conſtantly covered with gum plaiſter. This plan was likewiſe faithfully followed for ſix weeks, but proved equally abortive with the former. Nothing now appeared to me, more than what had been done, that poſſibly could be of any ſervice in this caſe, but electricity; when I propoſed to his friends, that he ſhould be placed under the care of that ingenious medical electrician Mr. Lowndes, who paſſed vibrations through the ſubſtance of the tumor every other day for three weeks and upwards. From the ſecond application of the electrical aura, the happieſt conſequences were to be expected, for there was a ſenſible diminution of the ſwelling, even from ſo ſhort an application, and in the courſe of the period alluded to, the tumor had entirely ſubſided.

It muſt create pleaſant ſenſations in the breaſt of every admirer of electricity, when on reflection it appears, that experiments with the electric matter not only afford an agreeable paſtime, but when judiciouſly ap-

plied

plied, has the power of removing many diſeaſes incident to human nature; and that while its various phænomena can gratify the ſoul of the philoſopher, they baniſh the pain and anguiſh of the ſuffering individual.

1789.

May 3. *A Memoir, containing a Selection of Caſes of Dropſy, effectually cured by Gum Guaiacum; with Remarks on the ſuperior Utility of Stizolobium in Worm Caſes.* By RICHARD CHAMBERLAINE, Surgeon, of Jamaica, and C. M. S.

The hint of exhibiting gum guaiacum in dropſy, the author acknowledges to have been taken from an account of its good effects, publiſhed by a Mr. Burke, aſſiſtant ſurgeon to the military hoſpital, South Carolina, where dropſies among the ſoldiery, during the laſt war, had been very prevalent and fatal.

Mr. C. had tried it in ſeveral caſes of dropſy with good ſucceſs: he particularizes two; viz. of two new negro girls both labouring under univerſal anaſarca, joined with aſcites. Without any previous medicine, he exhibited a ſtrong ſolution of gum

guaiacum in rum, the quantity, a table ſpoonful twice a day in ginger-tea; it promoted the ſecretions, particulary ſweat, in a very extraordinary manner; purged briſkly, and proved conſiderably diuretic. To her who was worſt, frictions of camphorated oil were applied: ſhe recovered rapidly; the other was cured ſolely by the gum guaiacum.

Eleven, ſelected from a very great number of worm caſes, wherein the ſtizolobium (cowhage) had proved ſingularly beneficial, are related. From a white child about two years of age, after every medicine of the ſhops had been tried in vain, it brought away ſtools almoſt entirely conſiſting of aſcarides; and a teres "of a moſt enormous ſize." From another child, two tape-worms were expelled by the ſame medicine, the one by the mouth, the other in the uſual way: tin, aloetics, calomel in large and ſmall doſes had been previouſly tried in vain. A negro child belonging to Dr. Langley of Kingſton, to whom it was exhibited almoſt in articulo mortis, paſſed upwards of an hundred worms, ſome of which, according to Dr. Langley's report, were eighteen inches in length.

No inconvenience whatever aroſe from the exhibition

exhibition of *very large doſes* of the cowhage, in ſeveral caſes wherein Mr. C. ventured to make the experiment.

May 25. *Caſes of Dropſy treated with Digitalis Purpurea; and of Chorea Sancti Viti with Flowers of Zinc.* By JOHN WRIGHT, M. D. one of the Phyſicians to the Infirmary at Briſtol, and C. M. S.

Dr. Wright relates, that ſoon after Dr. Withering had favoured the world with his publication on fox-glove, it was tried in the Briſtol infirmary, and in private practice, and ſometimes with ſucceſs.

Two caſes are given wherein trial was made of this medicine with ſome appearance of advantage.

The firſt is that of a lady aged upwards of fifty, who in conſequence of having experienced variety of troubles for upwards of two years, ſuffered ſeverely in her health. Frequent vomiting, and an uncommon degree of flatulency, which had reduced her ſo low as to confine her to her bed, were ſo far removed for a ſhort time by the uſe of ape-

rients and ſtomachics, as to enable her to go into the country; ſoon after which ſhe became dropſical. The pilulæ ſcilliticæ gave temporary relief, but at the end of ſix months from the firſt attack of her dropſical complaints, ſhe was ſuddenly ſeized with dyſpnæa, and frequent though ineffectual efforts to vomit, with continual nauſea, violent cough, and ſpitting, and excruciating pain in the ſide and belly, particularly when ſhe coughed. Her lower limbs had loſt the power of motion, and in a great meaſure their ſenſibility, and felt cold to the touch. Abdomen much enlarged, urine in ſmall quantity, pulſe intermitting and uncommonly weak, and the patient in momentary danger of ſuffocation. Dr. Wright was induced from certain circumſtances to try the digitalis, which he gave in doſes of gr. j. folior. exſiccator. with pulvis aromaticus; and increaſed to gr. ij. The various changes which took place during the courſe of a month, are related with much accuracy: at the end of which period, ſhe was ſo far recovered as to be able to manage her houſhold affairs, and walk abroad. Tonics, after this period,

were

were recommended, but in vain; and though indicated (ſays Dr. W.) it is impoſſible to prove that they would have ſecured her from a return of the dropſy, by which in a few months afterwards ſhe was carried off.

A ſudden and unexpected ſhock, to a ſuſceptible mind, and a conſtitution naturally very delicate, gave riſe to a dropſy in the ſecond patient, a lady of ſixty. The ſymptoms, if poſſible, were worſe than thoſe of the laſt mentioned patient. One grain of the powder of the leaves of digitalis, three times in twenty-four hours, was the doſe. Before ſhe had taken ſix doſes, her diſeaſe yielded to the power of the medicine, and ſhe enjoyed good health for ſeveral months afterwards. The neceſſity however of having recourſe to it, as Dr. W. is informed, has returned ſeveral times ſince the firſt attack, but a few doſes always anſwered her expectations in baniſhing the ſymptoms. It muſt not however be concealed, that about a year after her firſt uſing the digitalis, ſhe was ſeized with hemiplegia; but from this ſhe hath recovered, as far at leaſt as paralytic patients do in general. But this latter diſeaſe, the doc-

tor thinks, it would not be fair to aſcribe to the digitalis; the palſy, he obſerves, attacks perſons of all ages and conſtitutions, and the cauſe of it hath hitherto eluded the moſt ſkilful pathologiſts. In this ſtate of ignorance concerning the cauſe of palſy, little ſtreſs can be laid on an inſtance or two, in which it ſucceeded the uſe of fox-glove. He adds,

"No other inſtances of the like kind occur to my mind; but I recollect the caſe "of a patient being ſeized with hemiplegia, which deprived him of almoſt all the "uſe of his underſtanding, as well as ſpeech "and power of motion, who had juſt recovered from a dropſy attended with a violent "dyſpnæa, by the uſe of ſquills and gum "ammoniacum."

The flowers of zinc have been for ſome years generally uſed in the Briſtol infirmary in the chorea Viti. All the caſes in which it is known to have been tried are given in the following table:

Names.

Names.	Age.	Admitted	Discharged	State.
		1784	1784	
Job Marſhall	8	Feb. 2	May 19	Cured
		1785		
Will. Stadden	13	Jan 24	Feb. 5	Cured
Mary Brighton	11	March 10	April 9	Cured
Tho. Mathews	16	March 14	—— 11	Cured
Mary Gardner	9½	May 9	May 19	Improper—the particular reaſon not ſpecified.
		1786	1787	
Eliz. Jones	17	Nov. 9	Feb. 5	Cured
		1788	1788	
Mary Higgins	14	June 2	June 23	Relieved
W. Phillips	15	——5	Sept. 6	Cured
W. Haycock	12	July 11	Aug. 16.	Cured

From hence it ſhould appear, that the flores zinci are in general ſucceſsful; but two caſes are ſubjoined to prove, that zinc is not an infallible remedy in this convulſive diſeaſe.

The firſt is that of a boy of ſeventeen, who had ſeveral years before received an injury on the head that required the aid of the trepan; but had been very well until three months before the caſe was drawn up, when he was attacked with chorea Viti. Zinc, with a decoction of bark, for a time promiſed a complete and ſpeedy recovery; but after continuing them a month, the diſeaſe gradually returned without any known cauſe, and roſe to an extraordinary height. The greateſt benefit this patient received was from

from opium and camphor, to the uſe of which, together with a medicine, in which the virtues of the bark in ſubſtance, decoction, and tincture, are combined, his recovery is attributed.

The other two caſes are thoſe of two girls, both about ſeven years old. The one was perfectly cured of the chorea, by zinc, in a few weeks; but not long afterwards fell into a hydrocephalus which proved mortal. The other child, notwithſtanding the regular uſe of zinc in as large doſes as the ſtomach would bear, ſuffered ſeverely, having loſt almoſt entirely her ſpeech, and the uſe of one arm and leg. Recourſe was then had to the cold bath and decoction of bark, which relieved the patient, who, at the time the paper was written, was nearly reſtored to perfect health.

June 22. *Caſe of Strangulated Hernia.* By WM. LIVINGSTON, M. D. C. M. S. Aberdeen.

The ſubject of this caſe was a youth about 14 years of age, who, from ſome violent exertion on Feb. 1, 1786, had an inguinal hernia

nia produced; on the 9th a gangrene took place, and on the 12th he was received into the Aberdeen Infirmary, at which time Dr. L. firſt ſaw him; when he found that the ſcrotum, hernial ſac, and the ſtrangulated inteſtine were ſphacelated, and an opening formed, through which the fæces were diſcharged, conſiderable tumefaction, and tenſion about the abdominal ring; the frequency of his pulſe was not much increaſed; the parts were covered with common dreſſings, and cataplaſms; bark with wine was given. About ten days after the ſphacelated parts ſeparated, and came off, which enlarged the opening, and gave a greater vent for the fæculent diſcharges; there was but little alteration in the next fortnight, except that his pulſe was more quick, the quantity of wine was then increaſed, and an anodyne was given at night.

About the fourth week from his admiſſion, the granulations were healthy; the inteſtinal diſcharges were leſs thin, and ſome ſmall quantities came per anum, which increaſed as the opening in the ſcrotum and inteſtine became leſs; and in ſeven weeks after he was received into the infirmary; there remained only

only a ſuperficial ulcer, and the whole of the fæcal diſcharge paſſed by the natural paſſage, and his cure was completed in the firſt week in May.

The Doctor ſaw him when he wrote out this caſe; there was only a ſmall thickening on that ſide of the ſcrotum; no appearance of protruded inteſtine; he thought the teſticle rather diminiſhed.

Caſe of morbid Retention of Urine, with a Deſcription of the Parts diſeaſed after Death. By the ſame.

The patient, who was 74 years of age, had been for ſeveral years, occaſionally ſubjected to a retention of urine, but hitherto had received relief from the catheter. On the 23d of May 1789, he was admitted into the Aberdeen Infirmary. He had not paſſed any urine from the 18th; had ſuffered much pain; his ſtrength was much exhauſted, and his pulſe was frequent and feeble; there was tenſion about the region of the pubes, and the abdomen generally diſtended; he had no ſtool for four days. The catheter

was

was uſed, and about a quart of urine came off, but ſuddenly ſtopt; this did not appear to relieve him; ſtools were procured by an enema; the abdomen was fomented, and wine was given him; on the next day the ſame quantity of urine was drawn off, but without any relief; his ſtrength gradually failed, and he died on the 25th.

Ten quarts of water were found in the cavity of the abdomen; the bladder was empty; its internal coat appeared to have been inflamed in ſeveral places, and at the fundus, in the center of a livid ſpot, a circular hole was diſcovered large enough to admit the fulleſt ſized black lead pencil: the proſtate gland was double its natural ſize, and its ſubſtance was ſcirrhous. Dr. L. conſiders this ſtate of the proſtate gland to have been the cauſe of this diſeaſe.

July 27. *Hiſtory of a Caſe of Aſcites with Anaſarca, relieved by the application of Common Oil, aſſiſted by Friction.* By WILLIAM CHAMBERLAINE, Surgeon, Secretary to the Medical Society.

The patient was a lady near ſixty. The diſeaſe, which had yielded to no internal remedies,

medies, was very far advanced, and attended with a bad cough* ; the abdomen, thighs, and legs, diſtended to a ſize ſurpaſſing credibility. The patient had been confined for ſeveral weeks to her bed, and was unable to bear the leaſt motion: all medicines had been laid aſide, and death patiently waited for, when, almoſt in *articulo mortis*, frictions with common oil were recommended; from the exquiſite pain felt when any part of the ſkin was touched, the oil was *very gently* applied, without friction for the firſt two or three days: after that period ſhe could bear gentle friction, which by degrees ſhe became enabled to endure in an increaſed degree: in a week from the firſt application of the oil ſhe paſſed urine in very great quantity, and the ſwelling of the abdomen and limbs began to ſubſide; in a fortnight ſhe could bear to be taken out of bed, and to ſit ſix or eight hours in a chair: in a month, to walk up and down ſtairs without aſſiſtance, and ſoon after to go abroad. No medicines whatever were uſed during this proceſs.

* This caſe ſeems to form an exception to the generally juſt obſervation of Hippocrates.

* Ὑδρωπιοωντα ην βηξ εχη, ανελπιστος εστι.

Hippocr. Aphoriſm. § VII. 47.

August

August 24. *Two Dissections communicated by* Mr. MACMILLAN JAMESON, Surgeon, in the Island of Jamaica. Port Royal, Dec. 29, 1788.

The number of years that men will live in the West Indies, with diseased livers, and the length of time frequently before hepatitis proves fatal, especially the chronic, or that species which affects the substance and internal parts of the liver, is very generally known, and requires no comment. Three cases have occurred to me lately, within a short time of each other, which evince this; and confirm me in an opinion that hepatitis is here a more frequent disease than generally imagined.

It is also of some importance to be able to distinguish between hepatitis and other diseases, as it is treated in a different manner from most others, which cases of this kind may lead to.

I shall omit relating one case of hepatitis that was confounded with dysentery, as I did not see the patient till the last extremity, nor

nor could I obtain the particulars of his treatment.

Thomas Piddle, a ſeaman, in the naval hoſpital, at Port Royal, aged 28 years, of a very ſanguine, florid complexion, was ſeized about eight weeks before his admiſſion, with a violent pain in the region of the liver, attended alſo with a pain in the ſhoulder of his right ſide, dyſpnæa, and other inflammatory ſymptoms, for which the ſurgeon of the ſhip had at firſt bled him, afterwards applied bliſters to his ſide, and uſed different antiphlogiſtic remedies.

The 26th of Nov. after his admiſſion into the hoſpital, theſe ſymptoms continued to increaſe with greater violence, the pain in his ſide became more fixed, attended with great anxiety and a conſiderable fever. It was not till after his arrival at the hoſpital that I had an opportunity of ſeeing him; he was then put under a mercurial courſe, on the ſuppoſition of his having a hepatitis, which was continued till the mouth and gums were affected. The mercury was accompanied with opium, and other antiſpaſmodics, as the urgency of the ſymptoms required, but without

out ſucceſs, as he grew daily worſe till the 29th of December, when he died.

Appearances on Diſſection.

The cavity on the right ſide of the thorax was filled with a thin browniſh coloured fluid, which burſt out freely on making an inciſion, and had the appearance of bloody ſerum in dropſy, mixed with purulent matter. The whole of the pleura lining this cavity had a rough ſodden appearance; but there was no abſceſs or ſuppuration penetrating the mediaſtinum, or diaphragm, nor any communication between the diſeaſed part, and the left cavity of the thorax or abdomen. That portion of the lungs occupying the right ſide of the cheſt, was almoſt entirely deſtroyed, and the ſmall part of it which remained, appeared like a congeries of the larger branches of its veſſels, adhering together, and ſcarcely more than two ounces in weight. The left portion of the lungs was quite ſound; the only appearances which deviated from a natural ſtate were, a great flaccidity, and darker colour than uſual; and I could not diſcern on the left ſide any of thoſe adheſions of the lungs to the pleura,

pleura, or tubercles, ſo common after inflammation in the thorax.

Having always ſuppoſed this diſeaſe a hepatitis, I was rather ſurpriſed at the appearances in the thorax; and alſo, on opening the abdomen to find the liver only a little enlarged; and it was not until I had cut deep into its ſubſtance, that I diſcovered an abſceſs in the lower and poſterior part of the right lobe, which contained a very thick yellow pus, part of it in coagula, very bland, and inoffenſive to the ſmell (perhaps from its not having been expoſed to air.) This matter had not deſtroyed any of the exterior part of the liver, ſo as to diffuſe itſelf into the abdomen; and although the external appearances were ſo different from what might have been expected, yet that part which was in contact with the matter, had a rotten ſpongy appearance. The gall bladder was enlarged, and almoſt empty.

From theſe appearances, I am of opinion, that the abſceſs in the liver was not the cauſe of this man's death, although during his life it was miſtaken for the entire cauſe; for the abſceſs was not very large, and the reſt of the liver was ſound; but that the immediate cauſe of his

his death was from the deſtruction of the lungs, and the quantity of matter which filled the right cavity of the thorax; and it is a query how far theſe diſeaſes were connected with each other, or if at all. The deceaſed having belonged to prince William Henry's ſhip, he had been alternately from cold to warm climates (Halifax, Newfoundland, the Windward Iſlands, and Jamaica) in a ſhort ſpace of time. The hepatitis might have originated in the warm, and the inflammation of the thorax in the cold climate; eſpecially as I could not preſume, from the appearance of the left cavity of the thorax, that there were any ſeeds of conſumption, nor the man of a conſumptive habit; neither did I underſtand from himſelf that previouſly he had much cough or expectoration.

CASE II.

Jane Henderson, a ſoldier's wife of the royal artillery, aged 29 years, had been at Gibraltar two years and a half before her arrival at Jamaica; ſhe was apparently a very ſtrong, healthy woman, but at times addicted to

to the free ufe of ardent fpirits. On her firft complaining to me fhe was near her full time of pregnancy, and faid that fhe had, for fix months before, been much troubled with a pain in her right fide, difficulty of breathing, and a fmall fhort cough, &c. which fhe attributed to the fatigue of wafhing linen, and a trifling fall fhe had from the platform in the barracks a confiderable time before. I took as much blood from her as the nature of her fituation and the climate would admit, and gave internally mild aperient medicines, with pectoral emulfions, &c. On examining her fide, I could not obferve any preternatural appearances, but fhe complained of much pain on its being preffed.

I was fent for two nights after this, to vifit her, and, on my arrival at the barracks, found her delivered, and in fits, which continued, with very little intermiffion, till about two o'clock next morning, when fhe died.—The child was born alive, but died in a few minutes afterwards, and appeared to be nearly full grown. The attendants informed me, that, during the efforts of labour, fhe complained that fomething had given

given way within her, and was immediately after that, ſeized with the convulſions.

ON DISSECTION

Part of the liver was found much enlarged, but the reſt appeared tabid, and more than half deſtroyed by a large abſceſs, the matter of which had deluged the abdomen, and was lying on the ſurface of the viſcera. The diaphragm was very much inflamed, and that part of it which was in contact with the diſeaſed liver had ſuppurated, and an abſceſs opened a communication with the right cavity of the thorax, where a conſiderable quantity of the matter was lying. The contents of the pelvis were no ways different from the appearances after a natural labour.

I imagine that the abſceſs of the liver had burſt, and effuſed itſelf, during the efforts of labour, at the period when ſhe complained of ſomething giving way within her.— The quantity of matter was very great, and quite different from that in Piddle's caſe, as this was thin, dark-coloured, and extremely offenſive.

October 26. *A Case of Angina Pectoris cured by the Use of white Vitriol*, communicated by WILLIAM LEE PERKINS, M.D. of Hampton Court.

SAMUEL NEWMAN, aged 35, a coach-maker, of rather a weak habit of body, had laboured for about a year under the following complaints: a violent pain extending from the breast-bone to both the arms, attended with an intolerable sense of stricture in the chest, difficulty of breathing, sense of suffocation, great anxiety, and restlessness, palpitation of the heart, and irregularity of the pulse. These complaints would sometimes attack him several times in the day. They were exasperated by the least exercise; and he was frequently obliged to desist from walking, and was become totally incapable of following his occupation. Various remedies had been for a long time employed by able practitioners without success.

September the 6th, 1787, he was admitted as a patient at the Ossulston Dispensary, under the doctor's care, who, having also employed

employed ſeveral of the uſual remedies unſucceſsfully, had recourſe to white vitriol, the good effects of which he had often experienced in ſpaſmodic diſeaſes.

He directed it for him the 14th of September in the quantity of a grain morning and evening, with a quarter of a grain of opium, and ſome aromatics, increaſing the quantity as the ſtomach would bear it.

By the 17th the white vitriol was increaſed to two grains and a half each doſe: the opium was now taken alone in the doſe of half a grain every other night.

On the 1ſt of October the paroxyſms recurred leſs frequently, and with leſs violence; and he could bear gentle exerciſe without inconvenience.

On the 10th he had ſo little of his complaint that he was able to begin to work at his buſineſs; and

On the 20th he was perfectly well.

November 16. *A ſevere Spaſmodic Affection, ſucceſsfully treated.* By BENJ. SAY, Surgeon, and C. M. S. Philadelphia.

THOMAS SAY (my father), who is now in his eightieth year, was afflicted during thirty years

years with ſevere ſpaſm, uſually termed the cramp, which ſeized at firſt, ſometimes his feet, at other times his legs and hands, &c. until within theſe laſt eight or ten years, when they principally affected his ſtomach and breaſt. The diſorder at firſt attacked him but once in three or four months, until within theſe laſt four or five years, when they recurred very frequently, and at irregular periods. The effects produced upon the ſyſtem were very dreadful, eſpecially when the lungs were attacked, which happened at laſt two or three times in a week. During the paroxyſm he groaned exceedingly, and complained of an amazing tightneſs in the cheſt, comparing it to being ſcrewed in a vice, which after a ſhort time, perhaps in ten or fifteen minutes, would ſuſpend his breathing entirely; then he would lie as if perfectly dead, with the mental faculties completely loſt; but the greateſt ſingularity of this caſe was, that, when he was at the worſt, and during this apparent ſuſpenſion of life, the circulation did not ſeem to be the leaſt impeded, the brachial arteries poſſeſſed their uſual pulſation, the blood circulated through the jugulars, and through the whole arterial

and

and venous ſyſtem, as in health. Frequently, after lying in this torpid ſtate two minutes, he gradually recovered, like a man awaking from a ſound ſleep, continued ſomewhat eaſy for a few minutes, and then paſſed through ſimilar dreadful ſymptoms again. He frequently went off in a convulſion.

Various cauſes were aſſigned for this dreadful diſorder, and equally various were the remedies from time to time adminiſtered. Several eminent phyſicians were conſulted, who ordered venæſation, tonics, mercurials, anodynes, and antiſpaſmodics; all of which, as well as every other kind of treatment which promiſed any advantage, were perſevered in, without his receiving the ſmalleſt benefit from them; ſo that in the laſt autumn I attended him cloſely three days and nights, expecting each to be his laſt.

He had laboured under an hernia ſcrotalis for a great number of years paſt, which at times proved very painful to him; but appeared to be diſtinct from, and to have little relative connection with, the above diſeaſe; although frequently when he was afflicted ſeverely with one, the other was produced: I at

 length

length recommended him to wear a truſs, expecting thereby to give relief, at leaſt, to one diſtreſſing complaint; accordingly about four months ago, he conſented to wear one; the uſe of which has been attended with ſucceſs beyond my moſt ſanguine expectations, and equal to my wiſhes; it has relieved him from the moſt painful and alarming ſymptoms that could afflict the human frame; and he has not had more than two or three very ſlight ſpaſmodic fits ſince he applied the truſs, and had not one in which the breathing was ſuſpended.

Sept. 14. The following Caſe, by WILLIAM LUXMORE, Surgeon at Uxbridge, and C. M. S. was read.

A BLACKSMITH, about twenty two years of age, was attacked with the *genuine* Devonſhire colic: after the uſual remedies had been exhibited, viz. Laxatives, injections, fomentations, &c. evacuations and eaſe were procured, but a complete amauroſis immediately ſucceeded; the pupils were largely dilated, without the leaſt ſenſibility of the iris to the ſtrongeſt and moſt *ſudden* candlelight, opened on the eyes in a *purpoſely* darkened room:

room: on account of this local nervous affection, I applied a large bliſter plaſter inter ſcapulas, and gave him liberal doſes of volatile ſalt of amber, and valerian in powder, with ſtrong muſtard whey: to my agreeable ſurpriſe, in twenty-four hours, the optic nerves had perfectly recovered their functions, and, as I was informed by the patient, as inſtantaneouſly as they had been ſuſpended: he afterwards felt, as *is uſual in this diſorder*, a tingling down the ſpina dorſi, which was ſucceeded by a ſlight degree of paralyſis in the wriſts; this, however, was ſoon removed, and he quite recovered.

November 23. A Paper was read to the Society, ſent by Mr. BRADFORD WILMER, Surgeon at Coventry, and C. M. S.

IT related the caſe of a healthy young man, who had fallen on a glaſs veſſel, and received a wound in the upper part of the thigh; which bled ſo profuſely, that in the ſpace of an hour he loſt nearly a gallon of blood. The hæmorrhage had frequently returned during ten days; and, in conſequence of it, when Mr. Wilmer firſt ſaw the patient, he was be-

come

come weak, pale, and emaciated, and the whole limb was much ſwoln and indurated. From the ſituation of the wound, which ſeemed to penetrate through the rectus muſcle, Mr. Wilmer ſuſpected that the blood came from that branch of the crural artery which is ſpent on the external muſcles, and given off, ſoon after the artery emerges from Poupart's ligament. Being deſirous of accompliſhing a cure without an operation, Mr. W. at firſt directed cloths wetted with a ſolution of crude ſal ammoniac in vinegar and water, to be kept conſtantly over the whole limb; the Peruvian bark with elixir of vitriol to be frequently adminiſtered internally; and with theſe twenty-five drops of laudanum to be given every night, to promote ſleep. Notwithſtanding theſe remedies, the wound bled frequently during the next eight days; on the laſt of which a ſmall ſtream of blood burſt from the wound, and was carried to a conſiderable diſtance; the limb at the ſame time continuing greatly ſwoln. Mr. Wilmer, therefore, now abandoned all hopes, either of procuring the abſorption of the extravaſated fluid, or of healing the wound in the veſſel, without an operation;

operation; and on the following day, in the presence of Meſſrs. Cole, Renn, Whitwell, and Bullock, he performed the following. The tourniquet being applied above the external wound, he made an inciſion the whole length of the tumour; and cutting through the muſcles, diſcharged at leaſt four pounds of blood; part of it being fluid, and part coagulated, and the whole highly putrid. The tourniquet was now tightened, and afterwards ſlackened; but, notwithſtanding theſe changes, the cavity filled faſt with blood; and it was ſoon perceived that this blood iſſued from an aperture in the crural vein. A ſmall doſſil of lint was applied upon it, and over this pieces of ſoft dry ſponge, one over the other, ſo as to project beyond the ſurface of the external inciſion; the whole being kept on by a flannel roller. The ſame internal remedies were continued as before: the dreſſings were not completely removed till the ſeventh day from the time of the operation: no hæmorrhage afterwards inſued; and in proceſs of time the wound was perfectly healed.

In the courſe of the cure the patient ſuffered much uneaſineſs from the lodgment of

of hardened balls of excrement in the rectum; and in two days no lefs than twenty-four fuch balls were difcharged in confequence of injecting foap glyfters every fix hours.—The long continuance of the patient's confinement on his back produced an inflammation over the os facrum, which ended in a large and troublefome flough. A very large fuppuration alfo took place in the upper part of the right arm. And after this, when the patient was reduced to an extreme ftate of debility, he was attacked with fevere rheumatic pains in the ancles, knees, and wrifts. All of thefe complaints required very clofe attention: they were treated with great propriety: the wounds gradually healed: the patient recovered his ufual ftrength; and at the time the paper was written remained perfectly well.

1790.

May 3. A Paper was read, written by Mr. PHILIP WERNER, Navy Surgeon, C. M. S. and Surgeon to the Britifh Factory at Algiers, containing Nine Cafes which occurred to him at Algiers.

THE firft was an afcites in a boy of ten years of age, after an ill-treated tertian, in the

the cold fit of which he had always a ſevere pain in his belly and the region of the bladder. This diſorder was cured in a month by giving him daily about half an ounce of cream of tartar diſſolved in barley water.

The ſecond was a caſe of a man of 50 years of age, who had been troubled with a ſcrotal hernia for 20 years. This, from exerciſe and inattention, increaſed ſo much as not to be reducible, and brought on the uſual ſymptoms of ſtrangulation. A Turkiſh Tabib rubbed it with an ointment, and on the third day burnt it in five or ſix places with a piece of lighted touchwood. When the author was called in, the tumor was twice as big as his head, with total conſtipation, vomiting, &c. He took away a pound of blood immediately, and in the evening eight ounces more. By means of a horizontal poſture, ſuſpenſion of the tumor, emollient glyſters, ſaline draughts, with laudanum, together with cold embrocations of aq. veget. min. and vinegar, the ſymptoms diſappeared; the tumor leſſening much, though never ſo as to be reduced again as it had been with eaſe before this attack.

The third was a caſe of a very large hernia, which, whenever reduced within the abdomen,

domen, caused most excruciating pains, vomiting, &c. that were relieved upon it coming out again.

The fourth was a case of scrotum enlarged to the diameter of three feet, without the patient's health being affected. It had been ten years increasing to that size.

The fifth was a case of hernia not reduced until the 10th day. Witchcraft, nostrums, ointments, and fire, had been tried in vain, and the author did not succeed better; at first by copious bleedings,, warm baths, cold applications, laudanum, injections of tobacco smoke, &c. at last clysters of the infusion of tobacco, frequently repeated, brought away copious white frothy inodorous stools, and the patient was relieved.

The sixth was the case of iliac passion in a soldier who had lived in camp three months, principally upon cuscusu. Besides the usual means which were tried for his relief, immense quantities of dry hardened excrement were brought away with a small round wooden spoon. The belly was rubbed frequently with castor oil, and emollient clysters given, but in vain, as he died on the third

day

day of their uſe, which was the 18th of the diſorder.

The ſeventh was a ſimilar caſe, occaſioned by the patient's having eat an immoderate quantity of prickly pears. On the fifth day he was inſenſible, with cold extremities, and he had not paſſed urine the whole time. The ſame means were uſed as in the laſt. Sixteen ounces of blood were taken away. Two pints and a half of urine drawn off by the catheter, and by the uſe of the wooden ſpoon, and rubbing the belly with caſtor oil, large quantities of hard *ſcybala* were brought away, and the patient being relieved was walked up and down the room, ſupported by two men, when more of the ſame were voided, and he was cured with the aſſiſtance of a laxative of ſal. cath. largely diluted and wrought off with camomile tea.

The eighth was of a patient who had laboured for many years under ſuch ſevere paroxyſms as by the ſuperſtitious natives of Barbary were imputed to witchcraft. In theſe paroxyſms the pains he underwent were moſt excruciating throughout the whole inteſtinal canal. Some of the ſymptoms leading Mr. W. to ſuſpect that worms might be in part

the cauſe of his malady, he made trial of the ſtizolobium, or cowhage. On the third day he was relieved by a copious ſtool, with a great many worms of the genus *aſcaris lumbricoides*, which came away alive, and ſtrong. The cowhage was continued for ſome days, and every fourth day a doſe of jalap was interpoſed. From the firſt diſcharge of worms he had not any more fits, and in a few days was perfectly reſtored to health.

The ninth was alſo a worm caſe, with ſome uncommon ſymptoms; which had baffled for more than twelve months the power of every known anthelmintic, until Mr. Werner gave the cowhage, which brought away " near half a pint of the largeſt lumbrici he had ever ſeen." The ſame being continued, lumbrici were paſſed with every ſtool, for ſeveral days longer: tonics were afterwards preſcribed; and the patient, reſtored to perfect health, requeſted that Mr. Werner would permit him to have ſome of the ſame medicine for his children, who were alſo great ſufferers from worms. This being complied with, and the cowhage given freely, its beneficial effects were ſoon evinced. All of them paſſed worms after the firſt or ſecond doſe; and by perſever-

ance

ance in the uſe of it for a very few days, all their bad ſymptoms went off.

Dec. 12. A Caſe was ſent to the Society by Dr. PERFECT, of Malling, C. M. S.

THE ſubject of this caſe was a woman, in whom the catamenia did not appear till ſhe had entered her forty-ſeventh year, when the diſcharge came on, preceded for ſeveral days by indiſpoſition, as rigors, laſſitude, ſtupor, pain in the loins, &c. and returned at regular periods till her death, which happened in the fifty-ſeventh year of her age, and was occaſioned by a convulſive cholic.

She was a widow when the catamenia appeared, having been married many years, but had never been pregnant, and had enjoyed good health after her huſband's death, although ſhe lived chiefly on animal food, and indulged in malt and ſpirituous liquors, and uſed but little exercise.

1790.

August 2. *History of an Abdominal Tumor accidentally cured,* communicated by Mr. STEPHEN LOWDELL, Surgeon, F. M. S.

IN autumn 1777, Miſs ———, aged about 21 years, began to complain of an affection of her ſtomach, viz. nauſea, cardialgia, and pain, which ſometimes occaſioned her to vomit about a tea-cupful of a cold, clear, inſipid lymph, after which ſhe always found relief.

Theſe ſymptoms continued more or leſs until the beginning of December, during which time ſhe had a conſtant recourſe to Anderſon's and Hooper's pills, on a ſuppoſition that her complaints aroſe from a deficiency of *menſtruation.*

She had never menſtruated before her 18th year, and ſince that period, very ſparingly both as to time and quantity, for the moſt part going three or four months without any appearance, and that very trifling.

In this month ſhe was frequently troubled with pains in the bowels, and looſe ſtools, ſometimes tinged with blood, which were attributed to the uſe of the pills. At the latter end of the month ſhe had ſymptoms of a freſh

a fresh cold, succeeded with morning sweats, which produced great languor and weakness.

In January 1778, perceiving herself growing weaker, with loss of appetite, continual sickness, &c. she applied to a physician, who advised her to lose blood, and take an emetic; but finding no relief, she was ordered to keep in bed, which was adhered to for about three weeks.

On her first rising, and being dressed, she found her waist considerably more increased in size than usual. This, she was informed, arose from her weak state, and would subside as she gathered strength. Recovering very slowly, change of air and exercise were recommended. These were followed during the summer of this year, but without any alleviation of her disease, the sickness, &c. of the stomach still continuing, accompanied with an oppression and fulness, especially after eating. The swelling, which she first discovered in January 1778, had never diminished, but, on the contrary, kept increasing in a slow progressive manner.

There was no sensible decrease of urine, nor did she bring off her stomach any of the

lymphatic fluid above mentioned, ſince the tumor of the abdomen firſt appeared.

Finding the tumefaction continually increaſing, and her menſes as ſeldom and ſparing as before; in June 1780, ſhe conſulted Dr. S——, who preſcribed pil. plummeri, tinct. amara, vin. chalyb. Pyrmont water, &c.

Theſe medicines were continued two or three months, without any material benefit. In November following ſhe applied to Dr. F———, whoſe preſcriptions were nearly ſimilar to the above, with the addition of a more generous diet. She purſued this courſe likewiſe about two months, and in the ſpring of 1781 menſtruated regularly every three weeks.

She now ſoon grew better in all her complaints, except the ſwelling of the belly, which was at this period increaſed to a ſize as that of a pregnant woman on the eve of delivery.

Even under the preſſure of increaſed bulk ſhe was extremely active, and could take pretty ſevere exerciſe without fatigue.

The abdomen, though ſo large, was not ſo tenſe, as is commonly the caſe in *Aſcites*, nor

nor, on examination, could any undulation with certainty be discovered.

On the 4th of October, 1781, riding in an open chaise, she was by accident thrown out, and fell on her face; at which time she felt an acute pain across her stomach. This went off instantly, and she perceived no injury from the fall, except some slight scratches on the face.

On Monday, the 4th day from the accident, she began to make urine oftener than customary, and in a larger quantity. From this day till Wednesday, she continued to have frequent calls to make water, and the quantity which she evacuated during those three days, was computed at 18 quarts.—From this time the swelling began to abate, and continued abating until Thursday evening, when it entirely vanished. This discharge soon made her very weak and faint, and, although living generously, she remained in this state many days.

It is worthy of remark, that from the time the swelling first began she had no appearance of the complaint in her stomach till the autumn 1781; from which time to the middle of November she had frequent

returns, and from that period to March 1782 ſhe had not the leaſt remains of her enlarged belly, menſtruated regularly, and in every reſpect enjoyed good health.

REMARKS, &c.

The water in this diſeaſe was three years and nine months in accumulating, and during its riſe, progreſs, and termination, no ſymptom of diſeaſe appeared in any abdominal viſcus.

The ſuddenneſs of the cure, after the violent concuſſion, which the viſcera experienced from the patient's fall, induces me to believe, that previous to this accident the contents of the tumor were confined in a cyſt, void of any abſorbents, and that on its being ruptured, the water was diſperſed among the inteſtines, and readily imbibed by theſe veſſels, and conveyed to the kidneys.

As the diſeaſe was entirely removed, we would imagine that the water was contained in one cyſt only; though this does not appear always to be the caſe in encyſted dropſies. Van Swieten, from Aretæus and Ætius,

us, gives us hiſtories of dropſy, where the water was contained in numerous veſicles, in the cavity of the abdomen.

One inſtance of this kind, was a woman in St. Thomas's Hoſpital, whoſe caſe was ſuppoſed to be aſcites, and was attempted to be relieved by the trocar; but on perforating the abdomen, a very ſmall quantity of water came away.

The puncture was repeated two or three times without any happier event. No further attempt was made that way. Internal medicines were of no avail, and the patient expired.

On examining the body, the cavity of the abdomen was filled with hydatids, round and pellucid, like balls of glaſs; varying in ſize, the largeſt not exceeding a hen's egg, and the ſmalleſt a large pea.

As the cure before us was evidently accompliſhed by the concuſſion of the abdomen, is it not a perſuaſive argument for employing ſuch concuſſive means as may be ſafely applied in dropſies ſuppoſed to be encyſted, viz. *emetics*, *jumping*, and *riding on horſeback?*

March 17. Dr. MITFORD, of Poole, C.M.S. in a Letter to Dr. LETTSOM, communicated the following *Caſe of Fæces paſſing through the Urethra, with a Diſſection.*

JOHN LEER, ætat. 62 or 63, of a full habit of body, and living a ſedentary life, by profeſſion, an attorney, on the 26th of July, 1788, complained much of borborygmi, producing ſuch noiſe as to be heard at a conſiderable diſtance, and rendering it very diſagreeable for him to go into company: he had loſt fleſh conſiderably, attended with debility, being able to uſe but very little exerciſe; and had ſomething of a cadaverous appearance in his countenance. He complained of pain, though by no means excruciating, in his loins, and ſometimes about the umbilicus, particularly juſt before the borborygmi took place, on which the abdominal pain inſtantly left him.—Appetite bad, attended with ſickneſs after taking food, particularly fluids; frequent looſe ſtools of a frothy whitiſh appearance; urine natural; pulſe 60, regular, but low, without any preternatural heat.

The

The ſymptoms firſt made their appearance more than ſix months ago in a ſlight degree, to remove which he has at different times had recourſe to the ſpirituous tincture of rhubarb, Daffy's Elixir, &c. in large quantities: his ſymptoms were now increaſed to an alarming degree. Previous to this attack he experienced a good ſhare of health, and knows not what to impute his preſent complaint to, unleſs his conſtant habitual free uſe of ſpirit and water, and his ſedentary mode of living.

He now began a courſe of the pillul. gummoſ. with ſteel medicines, and gentle aperients at proper intervals.

About the ninth of Auguſt, in addition to his other complaints, he was much troubled with hiccups, for which boluſſes of muſk and camphor, with an infuſion of quaſſia, were preſcribed, to which this truly troubleſome and alarming ſymptom ſoon yielded, but was ſucceeded by a coſtiveneſs, accompanied with great lowneſs of ſpirits and reſtleſſneſs, until relieved by an enema: at this time he complained of increaſed pain in the loins, as alſo a pain in paſſing his urine, on which his medicines were changed for

for the ſal. diuret. diſſolved in the infuſ. amar. ſimp. The following day I was not a little ſurpriſed when they ſhewed me, for urine, in a glaſs rummer, a liquid ſtool; I concluded there had been ſome miſtake, but from this time he frequently brought off liquid fæces by the urinary paſſages, and at other times air mixed with the urine, cauſing it to bubble (as the patient himſelf remarked) like liquor from a cock when the caſk is almoſt empty. Theſe ſymptoms clearly evinced a preternatural communication between the inteſtinal canal and urinary bladder, though, on very particular enquiry, I could not find he had ever experienced any complaints which could lead to a ſuſpicion of an inflammation either in the bladder or inteſtines. When the contents of the inteſtines had found this very uncommon paſſage, his former ſymptoms mended much; the borborygmi almoſt diſappeared: his ſpirits grew better, and his appetite mended for ſeveral days; he then ventured to walk a little way, after which he found much fatigue, and from this time a laſſitude with debility increaſed faſt on him; he loſt his ſleep, and complained of pains very generally

nerally over the body, grew weaker every hour, till, on the 3d of September, he ſunk into the arms of death without a groan.

We obtained liberty from the friends of the deceaſed to diſſect the body; and the following account was given me by one of the ingenious gentlemen who operated.

Appearances on Diſſection.

On opening the abdomen we obſerved a portion of the ileum firmly adhering to the fundus of the bladder, with a ſlight appearance of mortification, and, on dividing the inoſculation, a paſſage was diſcovered from the inteſtine, through which the excrement might have freely paſſed, though very little was found in the bladder. The peritonæum was ſlightly inflamed, the meſentery and almoſt the whole of the inteſtines conſiderably ſo: the coats of the bladder and ileum were much thickened, and at the adheſion ſomewhat ulcerated; the inteſtinal canal was rather obſtructed from its thickened coats at the diſeaſed part, but in every other reſpect (the inflammation excepted) in a natural ſtate.

December

December 6. *A Case of a fractured Cranium, attended with a Loss of a small Portion of the Brain*, communicated by WILLIAM FRENCH, Surgeon, Harpur-ſtreet.

MISS DAVISON, aged 10 years, in the month of January, received a large lacerated wound on the ſide of the head by a fall from a window 10 feet high, upon a flint pavement, where ſhe lay ſpeechleſs and motionleſs. The wound was waſhed and ſuperficially dreſſed by a ſurgeon of Twickenham, where the accident happened. About five hours afterwards, Mr. FRENCH ſaw her with this gentleman, and diſcovered a fracture of the cranium, with a conſiderable depreſſion extending from above the orbitary proceſs on the left ſide, acroſs the coronal ſuture towards that angle of the parietal bone where it is connected with the frontal and temporal bones; a ſmall portion of the brain adhered to the dreſſings which had been applied, and about as much as would fill a tea-ſpoon was lying looſe in the wound. There being a neceſſity to remove her to town, it was done with every precaution that very

very evening. She was then bled, her bowels emptied by glyſters, and a ſaline draught with a mild opiate given every four hours. The next morning after the accident, finding the ſenſes recovered, and that ſhe ſuffered very little pain, he determined, in conſultation with another ſurgeon, to do nothing but attend diligently to what the ſymptoms ſhould indicate, dreſſing the wound with a ſoft digeſtive, obſerving a ſtrict diet, and continuing the ſaline medicines; the next day, finding the pulſe too full, ſix ounces more of blood were taken away, there appeared no neceſſity for more active meaſures; the ſame courſe of medicines and diet was purſued for a month, during which time ſeveral ſmall fragments of bone were diſcharged with the dreſſings, and in about ſix weeks ſhe perfectly recovered, the injured ſcalp every where adhering, with very little deformity.

1791.

March 21. *Caſe of Fractured Skull* (with a Plate). By J. BLOUNT, Surgeon, of Birmingham, and C. M. S.

THE tedious proceſs of nature in producing a ſubſtance for the ſcalp, has induced ſurgeons

surgeons to revive the practice of saving it in the operation of the trepan: but the originality and merit of the practice of laying it down immediately on the bare membranes, or on the brain itself, and producing an union by the adhesive inflammation, is solely due to Mr. Mynors*, of Birmingham; and the following case is another † instance of this very superior manner of treating fractures of the skull.

John Newey, aged 12 years, was on the 7th of February, 1791, kicked by a horse on the forehead. I found a wound across the forehead somewhat more than an inch above the left eye, through the scalp and pericranium about 2½ inches long, answering in shape to the form of the fore part of the horse-shoe, and discovered a fracture of the frontal bone, with considerable depression, accompanied with the usual symptoms. Mr. Mynors obliged me with his assistance in applying the trepan. The wound of the scalp was dilated and separated from the pericranium, sufficiently to bring the fracture into full view, and to allow of removing such parts of the

* Vide Mynors' History of Trepanning the Skull.

† Vide London Medical Journal, vol. v. p. 278. vol. vii. p. 152. vol. xi. p. 376.

bone

bone as were thought neceſſary. The portion of fractured bone was of an irregular circle, 1¼ inch in diameter, the lower edge was about an inch above the left ſuperciliary proceſs, and the right ſide immediately over the longitudinal ſinus. The fractured portion of bone (which was depreſſed more than equal to the thickneſs of the ſkull, occaſioned by the fracture of the internal table; extending nearly an inch in diameter more than the outer), together with ſeveral ſmall fragments, were removed. The flap of the ſcalp was brought forward, *and laid in contact with the naked dura mater*; the edges of the wound were carefully confined in the moſt perfect appoſition poſſible. At this time his pulſe had recovered its natural fulneſs. The pain of his head was gone, and he ſoon fell into a comfortable ſleep. Saline aperient medicines were directed till the 11th of the month, when the wound was examined, and the moſt complete union was found to have taken place. On the 16th the wound was again examined, and there did not appear to be any neceſſity of removing the dreſſings, but with a view of ſupporting the newly united parts; this was the laſt application.

The

The hiſtory of ſurgery, as far as I know, does not afford a caſe of fractured ſkull cured in ſo ſhort a time, with ſo little trouble to the ſurgeon, or pain to the patient.

EXPLANATION OF PLATE VI.*

Fig. I. The letters C A B D are an exact repreſentation of the cicatrix; that part between A and B ſhews the extent of the wound made by the accident; from C to A on the one ſide, and from B to D on the other, ſhews the direction, and how far the wound was extended by the knife.

Fig. II. Is an exact repreſentation of the fractured portion of bone that was removed.

1792.

June 4. *The following Remarks on the Bite of a Mad Dog,* from Dr. WHITE, of St. Edmundſbury, to Dr. LETTSOM.

IN the laſt nine months this part of the country has been terribly infeſted with mad dogs, during which time it has been my misfortune to be applied to by ſeveral perſons who have been bitten; and as the

* The Plate which accompanies this Caſe was preſented to the Society by the Author.

poet

Fig. 1.ˢᵗ

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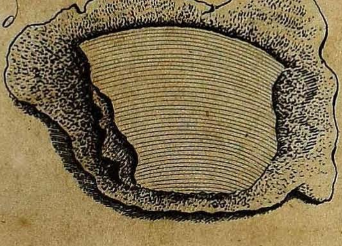
Fig. 2.ⁿᵈ



poet feelingly expreſſes himſelf, I have been "anxious and trembling for the birth of fate." Seven of theſe miſerable objects were bitten by dogs quite unprovoked, and with every appearance of madneſs. Three did not apply till the third day, two on the ſecond day, and two in a few hours after the accident. Three others have alſo been with me for advice, who were bitten by a cow that had the hydrophobia. All of theſe, except two, had the injured parts wholly diſſected out; the wounds well waſhed firſt with cold then with warm water; and the ſurfaces touched with lunar cauſtic: and I am in hopes, from the interval which has elapſed, that they are freed from danger.

One of the excepted two was bitten about eight months ago in the palm and on the back of the hand; in which caſe as much of the wounded part as could be with ſafety was removed, and the proceſs of ablution was continued for near two hours; nothing having been done externally until the day I was conſulted, which was the third from the accident. This perſon is in perfect health and ſpirits. In the other inſtance, the tooth of the cow had penetrated

the end of the finger through the nail, on which account I thought myſelf warranted to deprive the patient of the firſt joint.

It is now five months, or more, ſince I was conſulted about a foal which had been bitten by a mad dog five days before, through the wing of the left noſtril. The wounded part was much torn. I ordered it to be cut out, and no other means were uſed. The animal is at this time perfectly well. A valuable horſe, a cow, and two pigs, were bitten by the ſame dog, on the ſame day, to which internal remedies only had been adminiſtered; they all died mad within the month.

Similar collateral circumſtances were alſo proofs of the dogs being mad in five out of the ſeven inſtances before mentioned, on which external means only were employed.

Two perſons on whom exciſion and ablution had not been performed, and to whom medicines of falſe repute had been given, fell wretched victims to their credulity.

This brief detail of accidents that have lately fallen under my direction, together with the remembrance of four caſes of hydrophobia, which I have been called to in the

the courſe of my practice, have given riſe to the following ſuggeſtions.

That the virus may be exterminated by exciſion many days after the injury.

That the firſt ſenſible mark of its action is a pain in the injured part.

That the conſequent ſymptoms and ſenſations have a much nearer relation to ſpaſm than inflammation.

That the lymphatic ſyſtem is not affected in like manner to what it is from the inſertion of variolous, or any other infectious matter, ſuppoſed to be carried into the habit by abſorption.

Admitting theſe premiſes, Is it not probable that the virus lies dormant till the previous ſymptom of pain in the bitten part comes on?

Might not exciſion and ablution afford relief *at that period?*

May not the future progreſſive ſymptoms be produced by irregular excitement on the nervous ſyſtem *only?*

Is it abſolutely impoſſible to give relief by exciſion and ablution, when the patient is afflicted with *hydrophobia?*

 As

As the virus is moſt commonly, perhaps ſolely, generated in animals that never perſpire, will the cow, or any other kind of creature not ſubject to that reſtriction, produce, or in the accidental hydrophobic ſtate communicate this diſeaſe?

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